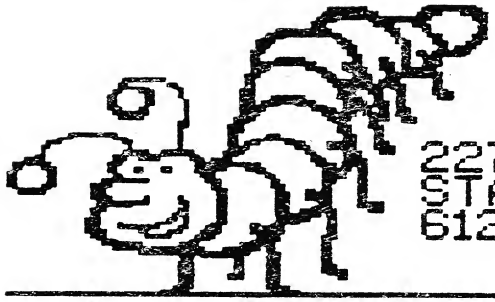
Atari Classics

January/February 1996

Volume 5, Number 1 $5.95

For the dedicated 8-bit user



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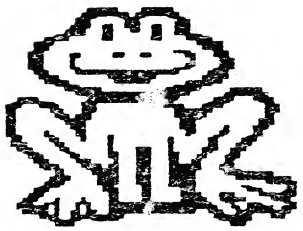

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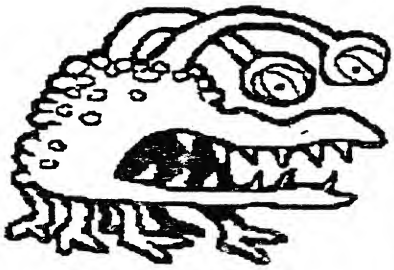

SOME OF THE STUFF THAT WE CARRY FOR THE ATARI IS OUT OF THIS WORLD!!

OTHER STUFF IS JUST PLAIN WACKY!!

THIS WAS DONE WITH NEWSROOM FOR THE ATARI 8-BIT COMPUTER.

Atari Classics

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This month's cover samples a few of the hundreds of graphics and photos on B. F. Schreurs' XL/XE Pooldisk CD-ROM.

EDITORIAL DIRECTOR
Bob Woolley
1161 Bay Street
Alameda, CA 94501
•RWoolley@ix.netcom.com
•CIS 75126,3446

EDITOR-IN-CHIEF
Jim Hood
5507 Langford Court
Concord, CA 94521-1614
•j.hood9@genie.com

ADVERTISING
Bob Scholar
2535 Tamalpais Avenue
El Cerrito, CA 94530
Subscribers may place noncommercial advertisements at no cost. These will be run in either a "Classified" section or in the "Letters" section.

HARDWARE & UTILITIES EDITOR
Charles Cole
1690 Foothills Drive
Sierra Vista, AZ 85635

EDUCATIONAL EDITOR
Bart Bresnik
556 Ware Street
Mansfield, MA 02048

GRAPHICS & ENTERTAINMENT EDITOR
Jeff Potter
814 Banbury Drive
Port Orange, FL 32119

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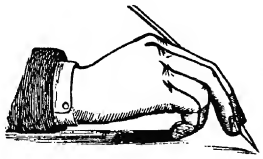
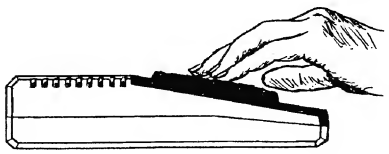


Correspondence



E-Mail Yes

I must disagree with Mr. Hicswa on the expense of e-mail. It doesn't have to be as expensive as his description would lead one to believe.

I subscribe to GEnie, one of the international online services. One of the things GEnie provides is e-mail, of course, including Internet e-mail. At the present time, the cost, including NY taxes, is just short of $10 for the first four hours or less of access per month, and $3/hour for any time over that. There are no toll charges, since GEnie has two local access phone numbers in my area.

Now, if e-mail were the only thing I use GEnie for, I'd agree with Mr. Hicswa's assessment. You can send a lot of letters for $10 a month. But, there are a lot of other things that GEnie offers—too many to discuss here. I usually use my full four hours every month.

Let's push a pencil on GEnie mail costs, using the $3/hour rate. My usual "letter" mail is about 2–3 pages long. I write it on a word processor, editing it until it says what I want it to say, print it out, address the envelope, and send it. It costs 32¢, ignoring paper and printer expenses. I can take the same letter, print it to a disk file, and upload it to GEnie in 2 minutes or so, using Bobterm at 2400 bps. That cost is 10¢. Moreover, if I want to send the same letter to several different addresses, "letter" mail costs 32¢ each. GEnie lets you send them all for the same 10¢.

If I capture my e-mail to my RAMdisk and read it offline, it takes less time than it did the sender to upload it. GEnie doesn't charge for logging on and checking announcements, and one of those announcements is if there is any unread mail in my mailbox, so there's no cost to me in just checking my mailbox. I think the costs compare favorably, don't you?

I wrote this letter offline and e-mailed it to AC via GEnie. It took about a minute and a half, and it was available to the AC California mailbox. It cost less than a dime. "Letter" mail takes an average of a week to go from NY to CA, and costs 32¢. Which way would you use?

Thomas J. Andrews

I remember when 1st class mail cost 3¢ and was delivered twice a day.

You may be able to say something similar about e-mail one of these days.

At press time (ohhh...sounds big time) GEnie had been purchased by Yovelle Renaissance Corp. and a new pricing schedule announced.

Free hours are upped to nine per month, but the basic rate went to $23.95 ($18.95 for existing subscribers), before NY or other taxes. Or get Internet access at $29.00 per month for "unlimited SLIP/PPP connections in 47 states," with Genie access an extra $2.75 per hour.

Jim

Reconditioned Disk Drive Sale

All drives come with power supply, I/O cable, and 90 day warranty.

810 (no case)	$25
1050	$35
Rana 1000	$40
1050 w/doubler	$45

Add $5/drive for S&H. A $15 credit will be applied if you send me your dead drive, power supply, and I/O cable. Make checks payable to:

Paul V. Alhart
524 North Zee St.
Lompoc, Ca. 93436

How's My Subscription?

I am always overjoyed when a copy of ATARI CLASSICS appears in my mailbox. Many thanks for a great magazine. My question though, is when does my subscription expire? I do not recall how many issues were involved in the original order. And there seems to be no indication on the mailing label to answer my question. Please advise.

John M. Johnson

Several people have asked that. Since we've been so slow in getting issues out, some people are also concerned that their "one year" subscription might only amount to three issues.

Your mailing label now tells how many issues you have left (for many of you, it is one). And that "one year" subscription is really for six issues.

Emulator?

Do you know of a C64 emulator?

Mr. Gumby

Nope.

ATESIG

It's hard to believe that ATESIG is now over six years old and that AC has never listed it as a USER GROUP even though some of your staffers, Cole and Woolley, are members!!

ATESIG is a cooperative group and pretty much a labor of love on my part. The past year has been relatively quiet as I have been swamped by other commitments to the point that Newsletter issues are erratic and delayed by months. Sounds familiar!!

The backlog of BASIC programming grows. Many are written for the PC and need to be adapted. Some are ones that some of us started and either never finished or never beta tested and debugged. We should also add menu loaders to the disks.

At the hardware level we need to create simple interface projects for the PBI and SIO ports. Initially, these should be introductory projects for those who are neither familiar with (BASIC) programming or digital logic circuits. The October 1994 Newsletter contained driver circuits for several types of turnout (track switch) operators. These can be activated using the game ports. The next phase should

add the circuitry and programming necessary to interrogate and address specific devices.

The development of an NMRA DCC interface is our number one priority, and is stalled. Apparently our current membership does not have the requisite combination of ASSEMBLY and Digital Logic skills. The Digital Command Control (DCC) standards specify the address, speed and control function signal "packets". Rumour has it that a Swedish group already has developed such an interface for the Commodore 64. If we had such an interface, there would be a dramatic increase in the interest and use of Atari 8-Bits. That should also result in increased AC subscribers, especially if each issue carried a short, simple, practical article. Keep in mind that most of these people are interested primarily in model railroading. If anyone could provide some help, to develop an NMRA DCC interface, please encourage them contact me.

Decker G. McAllister Jr.
145 Surf Place
Seal Beach, CA 90740
d.mcalliste2@ genie.com

As Decker mentions in the next letter, ATESIG's primary focus is model railroading, which is why we hadn't listed it with the other User Groups.

User Groups

The User Group listing ought to indicate the support focus of each group. In Long Beach, CA there used to be a User Group primarily oriented towards games. You could use some sort of coding such as GA=Games, PR=Productivity, PG=Programming, etc.

There should also be an E-Mail address provided for each group.

ATESIG was formed in 1989, and was described in a Current Notes article some years back. I had intended to provide some articles for both CN and AC. Unfortunately most of my "free" time was taken up with ATESIG and it's Newsletter.

Although Model Railroaders have a primary interest in ATESIG, some programmers have been attracted to the programming aspect. I also have received inqueries from musicians, screen writers and businesses that use Atari 8-Bits. Most of these needed some sort of help. If I can't help them, I provide referrals to those who can.

I plan to publish the next Newsletter after I learn how to use my "new" system. Once I get caught up, I will see what I can do about an article for AC.

Decker

We don't think he's caught up, but he does have an article in this issue.

Any User Group that wants may inform us of their primary interest and e-mail address.

New Toys = New Questions

Yesterday I acquired a lot of Atari hardware and software. This bonanza included a 400, 800XL, 1050 Drive, 1030 Modem, Koala Pad, Monitor, two printers, books, games, productivity software, etc. It looks as though everything is in excellent condition, complete with manuals.

1030 MODEM—The manual mentions that it operates at 300 BPS and auto-Loads Modemlink. It also says that 810 and 1050 drives must be turned off while it's operating!! Since an Antic 1030 Communications Disk and the cover for Antic's Backtalk 1.2 are included in the software, I assume it will also operate with other terminal programs such as XE Term. If so, can it be used in conjunction with the drives? Could it also be used with BobTerm?

The Writer's Tool, Ver. 2.2, OSS—This looks like a professional word processor with a database capability. Does anyone know how it compares to AWPlus and TextPro. The manual and cartridge were also accompanied by several disks marked for AW and WT (APX Antic) Printer Driver Construction Set(s). Those appear to include drivers for a large number of printers as well as a driver editor(s). Wow!!

Olivetti PR2300 (Model PU3080), Spark Ink Jet Printer, 80 Col. This looks pretty interesting and has full graphics capability. Replacement of the ink-rod-cartridge may be a problem.

Comrex CR-220AT, Pin Printer, 80 Col. This has the Atari SIO ports built in and is graphics capable.

The owner said that one of the printers is inoperative. However they both appear to be in excellent condition. Since my XDM 121 is acting up, I plan to set some time aside to check everything out, and attempt to troubleshoot the printers. Although the XDM121 prints OK, it periodically resets it's margins. Paul Alhart gave me a couple of good troubleshooting ideas that can be tried out.

Decker

Head Parking

I acquired a Fujitsu hard drive recently and did not know if the head was self-parking. I called Fujitsu and was told that it is. Since this took five calls to separate numbers in San Jose, I thought I would pass along the proper number.

Fujitsu Technical Support is at 1-408-894-3950. Press [3] to bypass the menu and go directly to a Rep.

Right now I am in the midst of archiving/backing up all of my files to 3.5" 1.44MB disks which are formatted [H] then [Y] - High Speed Format. All of this copying has provided plenty of experience using MyDOS, setting up directories, working with [R] working directories, etc. I haven't had any prior experience with all these directories, but pretty much have the hang of things now. Then the 5.25 disks will be packed away.

The next step will be to get some experience formatting, exchanging drives and partitions, and renaming partitions. Then I will put AW+ on an AW+ BOOT DISK, and operate exclusively with the HD.

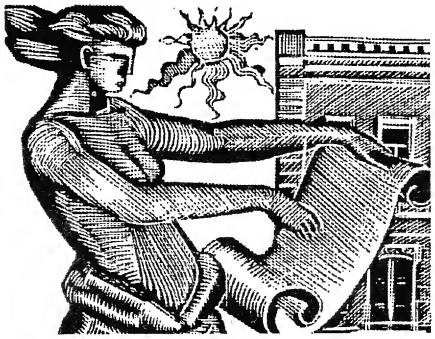
Maybe then I can get a start on the ATESIG Newsletter.

Black Box/Floppy Board Case—What's a good way to protect the BB/FB from dust, dirt, ants, etc.? I think I may have to shield it. The house is equipped with the BSR X-10 light control system, and outside lights have started to turn on randomly whenever BB/FB is on. The complete system is on it's own electrical circuit and is grounded independently of the other

house circuits. I was thinking of fabricating an aluminum cover, but possibly should use some tinplate ala modeling in the '40s. I also get concerned about those ribbon cables. In the past, I usually shoved the CPU back under a shelf to get desk space.

Decker

PRESS RELEASES



SpartaDOS Support

To all ATARI 8-bit users who use SpartaDOS as their main disk operating system.

My name is Nelson Nieves. I want to announce my intentions to support the ATARI 8-bit computer and users running SpartaDOS.

The programs are modeled after MS-DOS and Norton Utilities on the IBM platform.

Among the following programs in development are:

vUnErase – view and/or unerase deleted files or directories; recover partial deleted files to other disks or hard-drive partitions.

XCopy – will use the extra 64k on 130XE computers for faster read and write operations; SpartaDOS 3.2x users will be able to take advantage of archival copies when used in combination with FAtr.

DeFrag – a two part utility, defragmentor with a separate directory optimizer.

I have created a sample file (in ARC format), it contains full working versions of several of the programs that will be released commercially in mid 1996, a list of programs under development, and a questionnaire for you to fill in and mail back.

The sample files are NNTOOLS.ARC and NNTOOLS.TXT. They are now available on the Internet at FTP site:

atari.archive.umich.edu
atari/8bit/New

It will be moved by the keeper of the 8bit archives (Jody Lenn) when he gets a chance. A link to it should also be in "Newitems" at the same time that it is moved. I'm guessing it'll be put in the "Spartados" directory.

NNTOOLS.ARC should also be available on GEnie and BBSes across the U.S.

For those of you who cannot ftp or get the file from GEnie send $10.00 U.S. dollars for the sample file to:

Nelson Nieves, ATTN: ATARI 8-bit project, P.O. BOX 1702, Hatillo, PR 00659-1702

Let me know in which disk format:

```
[ ] ATARI 8-bit   SpartaDOS
[ ] IBM   360k    5 1/4
[ ] IBM   1.2Mb   5 1/4
[ ] IBM   720k    3 1/2
[ ] IBM   1.44Mb  3 1/2
```

Questions? Call 1 (809) 820-3135. From 8 a.m. to 5 p.m. eastern standard time.

Ask for Nelson.

MAE 1.0

Thank you to everyone who has been patiently waiting for the MAE assembler 1.0 release. Things are getting very close to being ready, and I think the results will be well worth the wait. The project really snowballed as I kept wanting to improve "just-one-more-thing", and now after some really major changes, it's almost finished. Special thanks to Glenn Saunders and Kent DeGroff, who sent Shareware donations even though I hadn't officially asked for them. This was largely responsible for providing the motivation for all the extra work. Special thanks also to Itay Chamiel who provided me with high-speed 64 column and 80 column text drivers.

Here's a partial list of what has been done recently:

New memory configuration which uses up to three banks of extended RAM, doubles the symbol table size, ups the source buffer to almost 40K, and reduces MAE's main memory usage to only $B700-$BBFF. The region from $4000-$7FFF in main memory is now completely free, and you can assemble object code into memory there, or whatever else you might want.

MAE comes with 64 and 80 column software drivers that work on a Gr.8 screen. Both drivers are *far* quicker than working with the XEP80, and if your banked RAM supports ANTIC banking, it won't reduce the size of your source text buffer at all! (But will use $5600-$7FFF of the above mentioned free memory area). The 64 column mode in particular is very nice looking on a monochrome or split-video monitor.

The native 40 column mode, and also the 64 column handler, both support horizontal scrolling out to 80 column line widths.

Completed 24-bit support, 65816 opcodes, and 16-bit operands in the debugger.

Everything is faster. Assembly speed is up to twice as fast, the editor is faster, and the debugger is significantly faster in some operations.

Storage requirements for local labels have been reduced, which saved an additional 25% on the symbol table size in some of my source files. This will make it easier to assemble larger source files without reconfiguring memory.

Macro processing has been completely rewritten, and is much more flexible. It now passes parameters as full ASCII strings, which makes a huge improvement over what you can do with macros.

After marking a block in the editor, you can press Ctrl-; to comment or uncomment the lines. (It adds or removes ";" characters at the start of each line).

The editor can move labels up or down to adjacent lines, or move lines up and down relative to surrounding lines.

Many more new features and bug fixes. I'm really happy with the way it turned out.

John Harris
jharris@cybergate.com

Report From England – AMS9

by Richard Gore

For those that don't know, AMS stands for All Micro Show and as the 9 suggests it has been a regular feature of the second Saturday in November for the last nine years. The show takes place in a large hall type of building in Staffordshire, England. The show's format is simple; exhibitors sell their wares from trellis type tables arranged in blocks around the hall. There are usually around 100 exhibitors and this year was no different.

In the early shows these exhibitors were mainly vendors selling 8-bit related items and not just Atari 8-bit, we're talking C64, Apple, Oric, Spectrum, Amstrad and more. For the last couple of years PC vendors have been gradually taking over the show, occupying more and more of the stands. Some of these suppliers have full specification set-ups for sale; that's Pentium 486/66 type machines for over £1,000. From my experience people don't go to shows of this kind to spend over a thousand pounds on one item, they want to go home with lots of items bought at bargain prices, and understanding that is the key to being a successful exhibitor. Still these guys keep coming back so there must be some profit for them.

There are other things on sale as well, ranging from telephones, to televisions, from satellite receivers and VCRs to dodgy satellite viewing cards (rife here in Europe) for viewing some of the more illicit satellite based offerings! What's all this got to do with the Classic Atari and why is this article being published in Atari Classics? Well read on...

About six years ago the Atari 8-bit community somehow adopted this show as their annual get together and exhibition of what's hot and what's not in the world of Atari. The probable reason for this was some of the main supporters of the Atari 8-bits lived pretty close by, say within 20 to 30 miles, one within three miles! Anyway the adverts were placed, "if you build it they will come!" and the vendors booked their stands. The result: thousands of 8-bit users turned up and the day was a huge success for all concerned. As time has passed by the numbers of 8-bit users has dwindled but there are still hundreds of people who make the journey every year, some from as far as Scotland which is over 200 miles away—we're a dedicated bunch over here as well. Actually there are now two shows per year, one in April and one in November. So that's enough of the introduction, let's get down to the details about who was there from the world of the 8-bit Atari.

We (that's Dean Garraghty from DGS and myself) make the annual pilgrimage as exhibitors by motorised transport; a van to be precise. The journey is a 160 mile round trip which means we have to depart Doncaster (our home town) at about 5:30 am. Every year for the past six years it has rained on our journey and this year was no exception. I wonder what sort of odds we could get for next year? As journeys go this one was uneventful. The highlight was when we overtook a coach travelling at 16 mph on a near 45 degree inclined slope with a fully ladened van in pitch darkness and pouring rain, no mean feat!

Anyway on to the show itself. This year there were six dedicated Atari vendors, which is the least number there has ever been, but that means the cash should be spread more thickly; or does it? These vendors were all arranged along the back wall of the building in what was termed 'The Atari Village'. This has happened over the past years and it helps regular visitors and newcomers to find the stalls they are most interested in. So who was actually vending their wares?

Page 6, the publishers of New Atari User had their usual prime corner slot, right next to Beacon Radio (a local radio station) who were broadcasting live from the event. Last year we were next to them and I can tell you it is no fun having music blasted at you all day. Back to Page 6; well they had back issue copies of their magazine, some ST software, cables for connecting your 8-bit to various monitors, a small amount

of 8-bit hardware – a couple of 810 disk drives, an XF 551, a touch tablet and a selection of PSUs as well as a good selection of commercial software, mainly cassettes but some disks. Prices ranged from £1 to £5 for the software and £2 for the cables to £40 for the drives (pretty expensive but they were supplied with PSUs, IO cable and a set of PD starter disks). For those that don't know, Page 6 have been supporting the 8-bits almost from the very beginning of the 8-bits in the UK, over ten years. They publish the longest surviving Atari 8-bit magazine which contains articles, reviews and type in software. They are really the focal point of all the Atari 8-bit activity in the UK. Subscriptions to their mag cost £15 per year (plus extra for postage overseas).

Next in the Atari village were....., well I've forgotten their name (yes they made a huge impact on me). They professed to being some user group from the South of England, but I can't say I've heard of them before. Anyway they had a fair amount of used hardware, nothing special; 256k XLs for about £30, and a small amount of commercial software. I wish I could give a fuller report on these guys but unfortunately I can't, so I'll move on!

TWAUG were next. Now in the past I've had my differences with these guys but in a true professional manner I'll put my personal feelings to one side and give you a fair report of their wares. Well they have a huge PD library, but I think they only had selected titles on sale on the day, probably their most popular items, but I could be wrong about this. They also had some used hardware and software and some old Page 6 magazines for sale. In addition to 8-bit software they had some 2600 titles and some quite rare (or so I was told) 7800 cartridges for one pound each. TWAUG publish their own newsletter/A5 size magazine and they had back issues of this for sale. Other than this their stand was pretty bare. I must say I expected them to have more.

Next up was Micro-Discount, run by Derek Fern. Now this stall was packed, mainly with software, Atari cartridges like Rescue on Fractalus and Moon Patrol for 50 pence each, still boxed and shrink wrapped! Derek also sells a large amount of continental European software including such titles as Technus, Barbarian, T34, The Brundles and many many more. These were all available for demonstration, are supplied on disk and cost about five pounds each. Also on display was a demo version of Tommings, the long awaited, much rumoured second clone of Lemmings for the 8-bit. The game is in monochrome, well several shades of grey with white and black also, which is a bit of a disappointment really, but that is quite immaterial because the programmers of the game have quit the project to move on to more lucrative markets. Tommings will therefore probably never be finished and as it stands there are just five levels to play. Copies of the demo were available for one pound each. The quality of software that has come out of Europe in recent years is really astounding; the graphical limits of the Atari are really being pushed, but gameplay is also present in most of the offerings. With the advent of Nir-PAL I should think these games would be in demand from American game players. Derek has a 30+ page catalogue available for about a pound and he will ship to the USA, unfortunately he doesn't take credit cards. His address; 265 Chester Road, Streetly, West Midlands, B74 3EA, England. For those with Internet access it's in the Vendors FAQ, which is regularly posted to the comp.sys.atari.8bit news group. Derek also has some interesting hardware available including 1020 plotters (interesting?), SIO T connectors (to reduce daisy chain lengths) and perhaps most impressive is an interface to allow the connection of a 720k 3.5" (or a 360k 5.25") drive mechanism into the SIO chain. They cost about 60 pounds each and they also need a power supply, as does the drive, none of which are supplied for the 60 pounds price tag. Derek is also involved in supporting the PC Xformer software and is an official European distributor of the full commercial version, and more importantly he has plans to sell some of his commercial software on 3.5" disks ready to run on the 8-bit emulator.

Next up in the Atari Village were LACE, an acronym for London Atari Computer Enthusiasts (no prizes for guessing where they come from!). These people publish their own newsletter called Boot!. I'm afraid I can't comment on its quality because I haven't seen a copy. Apparently it is quite an enthusiasts' publication featuring hardware hacks and programming tips. Anyway Boot wasn't much in evidence on their stall. Most of it was covered with 8-bit hardware, 1050 drives (£30), 256k XLs (£25) and more —including a couple of data recorders (yes we still use them—just—in the UK). Without a doubt the star of their stand was a 1200XL (never sold in the UK and as such quite rare) and this one was apparently upgraded to give PAL standard video output. Don't ask me how they did it but they claimed they had. They wanted £50 for it and after about an hour it was sold. They also had a couple of RANA drives for sale without PSUs and IO cables, again these are rare items in the UK, indeed I have never seen one before!

DGS and myself were on the next stall. DGS had their usual range of software including the German PPP products, SAM, Quick, Rubber Ball, Minesweeper, Glaggs It!, Bombi and more; all at new lower prices. DGS now have the rights to sell these titles all over the world (except for German speaking European countries). Quick is a great compiler based language similar to Action! but it has some unique commands for playing digitised sound, mouse control and using 'ordinary procedures' for DLIs and VBIs. Quick is now in its version 2.2 incarnation and is Quicker and more compact than earlier versions. Also available for sale were several hundred boxed 5.25" disks at £1 for 10 disks. A sign of the times is there were only perhaps two other stalls in the whole show selling 5.25" disks and they didn't have many. I shared a stand with DGS (to be cost effective and for convenient transportation purposes). I had a range of commercial software for sale including Jawbreaker, Mousekattack, Arena, Bubble Zone, Black Lamp, Tube Baddies and my GTracker range of software. Launched on the day were GTracker XL utilities

and Clip-Tracker XE. Both have extensive printed manuals which is the reason for their slight delay in being released (I just couldn't find the time to edit them!). Anyway I don't want to turn this article into an advert for my products so I'll just say if you want more details you can write to me at the following address: Richard Gore, 79 Sprotbrough Road, Sprotbrough, Doncaster, DN5 8BW, England; or e-mail chmrig@leeds.ac.uk.

Well that's the extent of the Atari 8-bit related stands. Goodmans were present with their range of ST PD software and one or two other general stands had some 8-bit compatible joysticks and even the odd piece of software (I wondered if they had even heard of the machines they were selling the stuff for?). Anyway the rest of the stands were taken up with PC equipment and software, including rather a lot of CD ROMs, and a couple of stands were selling satellite receiving equipment.

As far as the whole day was concerned I think more people attended than ever before but most of them were there for the PC equipment. Doing the show year after year you get to recognise some familiar faces. Sadly some of them were missing this year, but on the bright side there were a few new ones; or new to me at least. I think most 8-bit exhibitors made a profit but not huge ones. As we all know the Atari 8-bits are now in the hands of enthusiasts and so mega profits are just not possible, certainly very few people can make their living on selling 8-bit items (I certainly can't and don't). As to how long we can survive—who knows. Apparently the next April show will not be held in the same place but will be in Spalding (Lincolnshire) and on a Sunday. I have a feeling very few 8-bitters will be attending. Hopefully it will not be the death of the 8-bit shows in the UK but I am not overly hopeful of their long term continuance. Anyway sorry to end on a depressing note, but I hope you enjoyed this insight into the world of the UK Atari 8-bit user. To finish I would like to paraphrase a quote that somebody said to me at the show; "Why is it that people are willing to spend forty pounds on a drive or computer but not five pounds on the software to run on their machines? What do they do with the hardware, sit and look at it all day?"

That was in response to me telling him software sales had been very slow. It puzzles me too. Does anybody have a plausible answer?

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More Than Just a Speedy Atari BASIC

Thomas J. Andrews

This article explains many of the features that Turbo Basic has over and above Atari Basic. It is possible some people haven't programmed with Turbo Basic because they don't understand how the various commands work. This is an attempt to clear that up. Who knows? Maybe it will get someone back into programming again.

If you're anything like me, and you've done some programming on the Classic Atari computers, you probably know Atari 8-bit BASIC pretty well. You know what you can do with it and what you can't; what's easy to do and what's a real pain in the, uh, neck. And why not? Atari BASIC is versatile, easy to learn and use, and it's the language that was packed with our machines when we bought them.

You, like me, may have used Turbo BASIC XL, since it's in the Public Domain and is available almost everywhere for practically nothing, but you've used it mainly as a fast version of Atari 8k BASIC with more user-available memory, or for the speed of the compiler. As I've recently discovered, if you've just been doing that, you've been missing out on many of Turbo BASIC's most useful features.

Structured Programming

You've probably heard it all before, but I'll say it again. Structured Programming is the best way to write programs, especially large, complicated ones. Structured programs are easier to lay out, read, debug, and upgrade than programs that are just thrown together, especially if there's a long time interval between programming sessions.

Structure in programming is merely a way of breaking up a program into smaller, more managable pieces, and connecting them together in a logical, understandable manner. There are different forms of structure, identified with names like top-down or front-back, and each form has its rigid proponents who feel it's the ONLY way to program. I'm not that rigid. I don't even know what all the different forms are. Rather than champion a single form, I prefer to choose the one that seems to best fit the situation. I might even mix forms within a program, or combine some together, if that seems to be the best way to accomplish my task.

Turbo BASIC is much better suited for Structured Programming than Atari BASIC, with several features that almost make it easy.

Line Labels and Procedures

As I said before, Structured Programming involves breaking large programs up into smaller, more easily handled pieces. These pieces are often called modules. For example, a program might have one module for input; two, three, or more for processing; and another for output, all tied together by the main control module. Each module in turn could have several sub-modules. The more complicated the program, the more modules it probably needs to be understandable.

You can do modular programming in Atari BASIC using conditional GOTO's and GOSUB's. You assign a certain line number, say 5000, and GOTO or GOSUB 5000 every time you want to perform the operation.

On the surface this looks pretty simple, and it is—for programs that don't have too many modules. Every time you create another module, you have to remember the line number associated with it, and as the modules mount up that can mean a lot of remembering.

There's more. Often, during program development, you'll find that you need to renumber a program to make room for a new feature or to correct some

bug. (Turbo BASIC contains an excellent renumbering command, by the way.) During renumbering, many, most, or all your module line numbers might be changed, and you would have to change them in your own memory, as well. That can be really annoying, particularly if it has to be done repeatedly for a single program.

Atari BASIC will allow you to use variable names and expressions in GOTO, GOSUB, and TRAP commands, but this practice is generally discouraged, even though it can help with understandability. I have never seen a renumbering utility that can handle it, so you have to do that portion of renumbering by hand; another annoyance. The Turbo BASIC Compiler won't compile it, either.

Turbo BASIC uses a special type of variable, called a LINE LABEL, instead. A Line Label merely assigns a variable name to a line number. You then access that line by using the GO #, TRAP #, or ON GO # commands, instead of GOTO, TRAP, or ON GOTO. While Line Label variables can't be used or changed in an expression, the renumbering command and Compiler handle them with ease. Think a minute. What's easier to remember six months or a year later—GOTO 5000 or PRNT_OUT? (Yes, Turbo BASIC allows the use of the underscore in variable names, anywhere but the first character.)

You label a line by using the "#" command. Whenever Turbo BASIC enters the "#name" command, that name is placed in the variable name table and a value equivalent to the line number is assigned to it. For example, the line 5000 #PRNT_OUT:X=5:... would assign a value of 5000 to the variable #PRNT_OUT.

Procedures are similar to Line Labels, except that they correspond to subroutines. The entry point of a Procedure is identified with the PROC command. Example: 5000 PROC PRNT_OUT:X=5:... The RETURN command of a subroutine is replaced with ENDPROC, and Procedures are called with EXEC instead of GOSUB. Other than that, you treat them just like Atari BASIC subroutines. Like Line Labels, Procedures are easily handled by the renumberer and the Compiler.

With Line Labels and Procedures added to the Variable Name Table with ordinary variables, one might think that the table would soon exceed the Atari BASIC limit of 128 variables per program. Well, it might. Fortunately, Turbo BASIC allows 256 variable names per program, so that isn't likely to be a problem.

Listing Assistance

Turbo BASIC has a couple of features that use little or no memory in your program, but can go a long way in making the listings more readable. These features are only activated when the program is listed; they are ignored when it is RUN.

The first is indentation. When listing a program, Turbo BASIC automatically inserts two spaces after the line number for lines contained within loops, Procedures, and multi-line IF statements (we'll get to them shortly). If there are loops within loops, the inner programming is indented once for each level. This can be a really big help when analyzing a program for a bug or revision. If you want, you can turn indentation off with the *L- command, and back on with *L.

The other is the -- command. Whenever Turbo BASIC encounters this command while listing, it prints 30 dashes instead of just two. Liberal use of this command makes it very easy to visually separate the various modules in a program listing.

Multi-line IFs

The Atari BASIC IF/THEN statement is versatile, but somewhat limited. For one thing, you have to try to fit everything you want done if the condition is true on one line, and sometimes that's just not possible. For another, if you want to do one thing if the condition is true and another if it's false, you have to use part of that precious single line for the first to jump over the programming for the second. Either that, or you have to use several RAM-eating IF statements to accomplish your goal.

Turbo BASIC has an IF statement that can use as many program lines as needed. This statement has the form IF (exp):...:ENDIF. In this IF statement, if the expression is evaluated as true everything between it and the ENDIF is executed, even if the ENDIF comes several program lines later. If the expression is not true, the program jumps to the first statement following the ENDIF, even if it's on the same program line.

There's another feature to this IF statement that makes it even more versatile. When the statement takes the form IF (exp):...:ELSE:...:ENDIF, the part between the expression and the ELSE is executed if the expression is true, and the part between the ELSE and the ENDIF is executed if the expression is false. Like the above IF/ENDIF, the IF/ELSE/ENDIF can spread out over several program lines.

The IF/ELSE/ENDIF construction is used in several computer languages. Learning to use it with Turbo BASIC is a good first step toward learning some of those other languages.

Loops

Atari BASIC has one formal loop structure, the FOR/NEXT loop. While this is a very useful loop type, it does have its disadvantages. Chief among these is that this loop type is designed for situations where the programmer knows how many times to go through the loop. Sometimes you really don't know this, but simply want to keep executing the loop until some condition is met or until something specific changes. While you can manipulate the FOR/NEXT loop to do this, it's much better to have a loop form designed for the situation. Turbo BASIC has three such loop forms.

The REPEAT/UNTIL loop is one of these. The beginning of this loop is marked with the REPEAT command, and the end with UNTIL (exp). When executing the loop, the computer goes through it to the UNTIL command, where it evaluates the expression. If the expression is true, the program leaves

the loop. If it's false, the loop is executed again, starting at the REPEAT command. This loop is always executed at least once, and, if the value of the expression never becomes true, is endless.

The WHILE/WEND loop is a bit different. The beginning of this loop is marked with WHILE (exp), and the end with WEND. With this loop, the expression is checked at the beginning, and if it's true the loop is executed. If not, the loop is skipped entirely. Unlike the REPEAT/UNTIL loop, a WHILE/WEND loop might not be executed at all. Naturally, if something doesn't happen within the loop to change the value of the expression, this loop is endless, too.

The DO/LOOP loop, on the other hand, is designed to be endless. This may seem a strange thing to do, but it does have its uses. Say, for example, you have a program that you want to always return to a main menu after it finishes some task. If you enclose the entire thing in a gigantic DO loop, it's quite easy to do and uses less RAM than a GOTO statement. The beginning of the loop is marked with a DO, and the end with a LOOP. That's all there is to it. Simple.

There are situations where you might want to leave a loop from a place other than the normal departure point. This is generally considered poor programming, because if you need to use an abnormal departure a different loop type would probably have served better, but still the situations do exist. In Atari BASIC, a GOTO is used to jump out of the loop, after which a POP should be used to clear the loop entry off the Runtime Stack. This works in Turbo BASIC, too, and the Turbo BASIC POP command works with all four loop types, as well as subroutines and procedures.

The Turbo BASIC way of leaving a loop using the EXIT command is much more elegant. EXIT is a combination GOTO/POP command that causes the program to jump just past the endpoint of the loop and clear one entry from the Runtime Stack, all in one operation. It's more RAM-economical, too. A GOTO/POP combination will use 10 bytes where an EXIT will use only one.

Other Commands

Turbo BASIC has other commands that make things easier or more RAM-efficient—or both—than Atari BASIC.

There are several DOS-type commands, including BLOAD, BRUN (Binary LOAD and RUN), DELETE, RENAME, DIR, LOCK, and UNLOCK—much easier to use than Atari BASIC's XIO functions. DPEEK and DPOKE eliminate a lot of that high byte/low byte arithmetic that can be so annoying. MOVE and -MOVE will quickly and easily shift whole blocks of data around in memory. BPUT, BGET, %PUT, and %GET provide types of data I/O not directly supported by Atari BASIC, but which are generally faster and use less storage space.

CLS provides a simple way to clear the screen. PAUSE gives a timed program delay, more precise than those FOR/NEXT delay loops of Atari BASIC. TRACE, DUMP, RENUM, and DEL are powerful debugging tools. *B will trap the BREAK key. INSTR and UINSTR will search a string for a specified substring and report its position. ERR and ERL will report an error and the line number where it occurred.

HEX$ and DEC are hexadecimal/decimal converters. DIV, MOD, FRAC, and TRUNC provide integer and fraction arithmetic. Three Boolean functions let you check the status of individual bits without a lot of mathematical manipulation. CIRCLE, FCOLOR, PAINT, and TEXT provide some useful graphics functions.

So Why Not Start Using Turbo BASIC?

You tell me. As I said before, Turbo BASIC is in the Public Domain, and ranks high on the list of Most Universally Available 8-bit Programs. Any User Group Library that doesn't contain it is woefully deficient. Every PD/Shareware outlet I ever heard of carries it, if they have nothing else.

If you want to learn more about using Turbo BASIC XL, or just can't find it anywhere else, write to The Ol' Hackers Atari User Group (OHAUG), c/o Ron Fetzer, 22 Monaco Ave., Elmont NY 11003, and ask for Ron's Turbo BASIC Programmer's Kit. This three disk set contains both the Turbo BASIC interpreter and compiler, instructions for each, a 34 page expanded manual, and tutorials on programming. The cost: just $7. Make your check payable to Ron Fetzer. Ron put a lot of work into this kit. Trust me—it's worth it. So What are You Waiting For?

A—T—A—R—I
Answers, Tips And Relevant Information

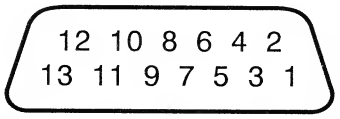
Alternate Uses for Your Atari

Paul V. Alhart

We all know how great our Ataris are for word processing, modeming, teaching, keeping records, printing labels and signs, games, etc. Mine is used everyday for some task or other. I'd be lost without it. To add to this dependence, new uses for my Atari keep cropping up. Recently my kids brought over a home video of my Grandson at Christmas time. I knew right away I had to have a copy. But not just a plain copy. With the help of my Atari I would 'soup it up'. The Atari's RF output can be recorded directly on a VCR. The monitor outputs (audio and composite video) can be used instead for an even sharper picture. Just plug them to the Video/Audio jacks on your VCR.

There are video title programs available, but not having one, I set out to do it my way. I selected a few MicroIllustrator pictures to use and used The Tablet Typist to add text to them. Fader II allowed me to dissolve from one picture to the next. A nice effect but I wanted sound too. I remembered that the music on the Atari States and Capitols cassette always reminded me of the music you hear in a movie theater at intermission. But how to get it to the VCR while running Fader II from disk? Those data I/O sounds would not do either. No problem. A jumper made from a short piece of wire was all that was needed. I just jumpered pins 8 and 10 on one end of an I/O cable and plugged the other end into a spare I/O port of my system. This allowed me to operate a 410 or 1010 Atari cassette machine manually without the need of a CLOAD command. The music audio track was fed straight into the computer via an I/O cable and added to the RF output. A short BASIC program let me have a 'Cast of Characters' scroll up the screen at the end of the video.

I/O plug pin out:



At work I have access to a lot of high tech test equipment. One of my favorite items is a Logic Analyzer. Wouldn't it be nice to have one at home? Well why not, I thought? I built a simple interface that plugs in to the joystick ports and dusted off the old MAC 65 cartridge, and the Atari 8-bit Logic Analyzer was born. Granted it doesn't have the all the bells and whistles of a $35000 machine, and it is limited to about 200KHz resolution, but it does make trouble shooting hobby project logic circuits a lot more fun. With a little modification to the interface it could even be used as an automotive engine analyzer.

My Atari also performs as a television color dot/bar generator and an audio continuity tester. Others use their Ataris to control lights, model trains, thermostats, and virtually anything else you can think of. So stop thinking of your Atari as just a great word processor or superior game machine. Think of all those other time and money saving things it could be doing for you.

Program Information

The Tablet Typist - *by Matthew Ratclif (Analog Magazine 2/87)*

This program allows you to add multi colored text to uncompressed (62 sector) MicroIllustrator files.

Fader II - *by Patrick Dell'Era (Antic Magazine 5/85)*

Fader II will load a series of compressed and uncompressed MicroIllustrator files in the order they are found. After displaying a picture for a user set length of time a dot by dot dissolve of the screen takes place ending up with the next picture being displayed.

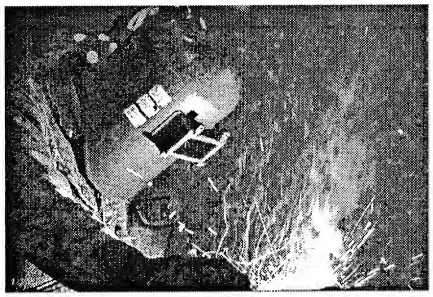
8-bit Logic Analyzer - *by Paul Alhart (available for $5)*

Captures 8 inputs over a selectable time period and displays data in graphic or digital form. Allows for word sync at beginning or end of capture period. Included with program is commented MAC 65 source code, documentation, and instructions for building the logic probe interface for about $10.

Public Service Announcement

When an Atari dealer went bust I inherited several boxes of photocopied program documentation. He must have copied everything that came through his store. There are docs for a couple hundred Atari 8-bit programs. If you have obtained some used software with no documentation I may have just what you need. For a list of available docs send a SASE to:

Paul V. Alhart
524 North Zee St.
Lompoc, Ca. 93436



Basic Skills – Soldering

Bob Woolley

BEFORE WE START—GET SOME SORT OF EYE PROTECTION. GLASSES NOW, OR AN EYE PATCH LATER... HOT SOLDER CAN BE STOPPED BY ANY KIND OF GLASSES. YOU DO NOT NEED HIGH IMPACT RESISTANCE.

So, you want a Smart OS? An IDE drive? Memory Upgrade? All of these are available for your 8-bit Atari. But, you have to have some electronic skills to install them. Not a lot of knowledge, but a reasonable amount of skill. You don't really have to understand how the logic or the software works, but a poorly installed upgrade will turn your Atari into a box of rocks. I am going to attempt to review the how-to skills required to successfully do any of these alterations you read about in AC or elsewhere. If it looks too hard, try it on a cheap test machine before you commit to doing your "baby". Motherboards for a 1200XL for example, were dirt cheap for a long time—now, the whole machine can be picked up for a few bucks. I personally prefer the 1200XL myself, but your favorite may be something a little newer. After a few tries and your machines are still coming out doorstops, maybe you should stick to plug-in mods only, or find some nice person to do them for you. I do think though, that a little practice and careful reading here will produce adequate results, even if you've never done any electronics before. Of course, I have been wrong before....

The medium we will be working in is the Printed Circuit Board. It is normally a fiberglass sheet, 1/16 of an inch thick, to which thin copper foil has been attached on one or both sides. Refer to Diagram 1. Most Atari boards are double sided with a plated-thru hole for the wires and leads (a notable exception is the junk board in the XF551). This hole is actually a thin cylinder of copper that connects the top foil to the bottom foil through the hole. These traces, as they are called, connect the different components together and take the place of wires. When we make changes to the PC board, we cannot move these traces, of course, so they are often cut and/or re-routed with discrete wires. If that is all that is needed, simple soldering skills are all that is necessary. When we start de-soldering components, then it gets a little harder. First, we'll tackle soldering.

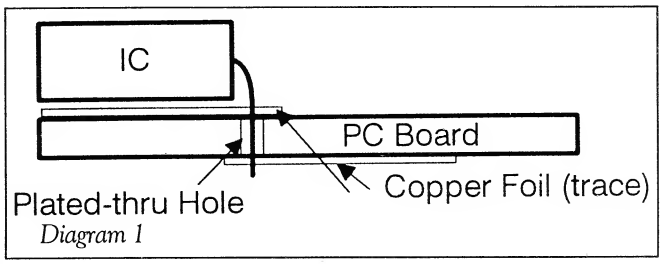


Diagram 1

Solder is a mixture of lead and tin which exhibits an unusual property—the melting point of the mixture is lower than the melting point of either of the components. This melting point is lowest when you have 37% lead and 63% tin. Any other concentrations result in a plastic phase that produces poorer joints, so use at least 60/40 solder. Stay away from 50/50 or pure tin—that's for plumbing. The principle is simple—heat the components and foil and melt solder into the joint (solder is great at wicking into every nook and cranny to fill the joint completely). The solder then acts as the electrical conductor between the two parts to be connected as well as supplying some mechanical bond. Your problem is usually applying the heat and keeping the solder from running into places where it is not wanted!

Heat flows from the hot place to the cold place, from the tip of your soldering iron to the copper foil and component lead. How well it flows is dependent on how well there is mechanical contact between the iron and the place you want to heat. Two factors influence contact—surface area and surface area. That is: how large is your tip and how much of it is touching the target. Having a large tip that is being applied at a single point is less effective than a smaller tip applied across a surface. One of the best ways to increase contact area is to apply a SMALL amount of solder to your tip. The solder on the tip will flow around the area to be connected and provide an excellent path for heat to flow. Take a look at Diagram 2. Notice that the first illustration shows the soldering iron tip touching both the foil and the component lead. This will result in sufficient heat transfer to both tar-

gets and a quick, clean joint. The other two drawings show poor or no contact to one of the targets, which will result in one of two problems:

- It will take a long time to heat both targets which will overheat the joint.
- The poorly contacted target will not heat sufficiently to allow the solder to adhere to it's surface—creating little or no electrical contact even though an apparent mechanical bond may form.

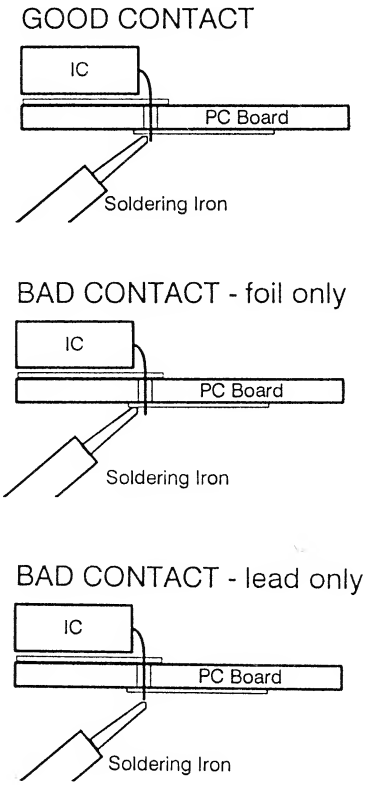


Diagram 2

In the first case you may damage the components, break the bond between the board and foil or both. In the second, a seemingly sound contact may be electrically open, or worse, intermittently open (ugh).

The process is then this. Apply heat to both targets evenly. Wait 2 seconds for the heat to transfer and apply solder to the junction of your iron, the foil and the component lead. Only add enough solder to fill the joint spaces—it is not necessary nor desirable to have a big blob of solder on the joint. In fact, it is much more likely that you will add too much solder rather than not enough. If the solder does not melt into both targets, you are doing something wrong. Do not sit there holding the iron to the joint waiting. You have a problem, don't make two problems out of it! Add a little solder to the iron tip before you apply the heat to the targets. If the solder will not melt easily onto your tip, the iron is too cold. Usually a joint that will not heat up even though you are making good contact is the result of using too small an iron (or tip) for the job.

Sometimes foreign material on the tip interferes with good contact—keep the tip clean (wipe it on a rag or damp sponge if it looks dirty). The foil and lead also need to be clean. Take a look at the pins on an IC. They are made out of copper but they don't seem to be copper colored, do they? They are 'tinned' with solder, which means that they have a thin coating of solder (or tin) on them that prepares them for soldering. This helps a whole lot when you are working with them. If you are trying to solder naked copper, make sure it has no oxide on it at all—bright and clean is the word.

Electronic solder has one more component added to it, rosin (called rosin-core solder). This material will melt into a clear liquid and float to the surface of whatever you are soldering. It is essential in cleaning the surface and producing good bonds. Make sure you are using rosin-core solder or you will have a devil of a time. You may notice that the solder tends to stick to the tip of your iron when you remove it from the joint. This leaves a sharp spike in the surface of the solder and is the result of a loss of rosin in the joint. Just add a little fresh solder (containing more rosin) to the targets and the solder will no longer spike. If, that is you don't leave the heat on the joint too long. If you overcook the rosin again, you'll get more spikes. Be quick—one second after it all melts, pull the iron.

OK, so you're ready to solder a joint. You put a little solder on the tip of the iron, the targets (the foil and the component lead) are nice and clean, so you hold the tip right at the junction of the foil and lead. Waiting two seconds, you apply solder to the contact point. The solder does not melt. You wait one second and then give up and remove the iron and solder. What happened? Well, try immediately to melt a little solder on the tip. Does it melt easily? If not, then you probably have too small a tip and/or iron. A rule of thumb is to have a tip that is larger in mass than the structure you are going to solder. Otherwise the joint "sucks" all the heat out of the tip and the temperature drops below the melting point of your solder. This is a common problem in working with tiny electronic connections. You only want to heat a small area, which requires a small tip, but the low mass at the tip makes it hard to properly heat the joint. You may have to experiment.

The opposite problem is a tip that is too large. You heat up the joint and apply solder. The solder melts quickly and runs into the connection. And, runs right out the bottom of the hole. And, into the pad next door, making a nice short between the two circuits. This is too much heat and in the wrong places. Solder will flow into any space that is above its melting point. This includes the joint next door, up into the component—everywhere. This is another reason not to overheat the joint either by using too large a tip or applying it too long. Experi-

ment. The larger the thing to be soldered, the larger the tip. Two seconds of heat and one second of solder or bust.

After you have completed a few solder connections, take a look at the factory joints. Does your soldering look similar? Same amount of solder, nice and smooth? If it does, good! You got it right! Now for some harder stuff—de-soldering.

Your Atari has a whole bunch of components soldered onto the motherboard. Unfortunately, we need to remove some of them from time to time so we can upgrade some aspect of the machine. The easiest joint to take apart is a simple wire/lead in the hole. You just hold the wire or lead with a small pair of tweezers, heat the joint as if you were soldering and pull the thing apart when the solder melts (2 seconds, right?) What can go wrong? Well.....

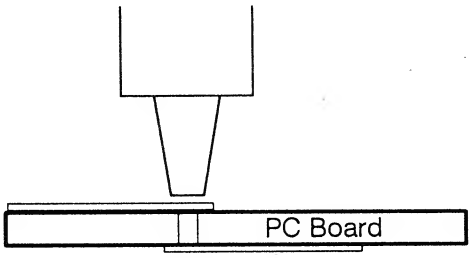
If you are working on the XF551 board, the heat from de-soldering may break the bond between the copper foil and the board. When you pull out the wire or lead, the trace comes along for the ride. This is most discouraging! Fortunately, most all other boards have much better mechanical specs and will not separate (the 130XE is a little weak in this respect, also). Moral is: don't overheat the joint and do not pull on the wire or lead until the solder has melted. Do not pull too hard at all as a matter of fact. Many component leads are crimped over the edge of the hole to fix them in place while they are being soldered. When you remove these leads, a little manipulating is required to withdraw them. Pulling harder is not the answer. This is why tweezers are best—weak, wimpy tweezers that will not let you get a strong grip and King Kong the trace. The other reason for tweezers is to allow only a very small contact area for the gripping tool. Clamping a heavy pair of pliers on the wire will create a huge mass for you to heat up with your little old iron—and we know how poorly that works. Fingers work real well, also.... lets you know when it is hot, too. Hurts a little....

Great. got the wire out. Now we have a hole full of solder. Three options here.... Maybe you don't need to solder anything back in this hole. Good—you're done. Leave it full of solder, nobody's looking! Or, you may need to solder a single new wire or lead in there. You can just heat the hole, add a little solder (adds a little new rosin) and push in the new wire. Two problems may result. If the wire is not already tinned (solder coated), there may not be enough heat to make a proper contact. And, the wire itself may locally cool the joint, producing poor contact. So, make sure you tin the wire and give it a little extra heat—remember you only heated the hole before you inserted the wire. Two seconds of heat, insert the wire, and two more seconds of heat. OK?

If you are going to use the hole for a multiple insert, like an IC socket, you must first clear the hole of the old solder. This is not a bad idea even if you are inserting a single wire, but you decide that for yourself. Anyway, there are two ways of clearing the hole, braid and a de-solder tool.

Braid (or solder wick) is most effective if you have an unused hole filled with solder. You simply place a clean piece of braid over the hole and hold your iron tip on top of it. After 3 or 4 seconds, the braid will heat up, transfer enough heat to the hole to melt the solder, and suck the solder right out of the hole. It's almost like magic. The used braid will be filled with solder—just cut it off and discard it. Easy.

Another solder removal method is the de-soldering tool. This guy uses heat and vacuum to physically suck the solder out of the hole. They make them with electric vacuum pumps and electronic controls (big $), but my manual Radio Shack model works fine. With one of these, you depress the bulb, heat the hole for two seconds and release the bulb. Just like a solder milkshake. Out comes the solder. Of course, the molten solder is now inside the tool and depressing the bulb will result in a solder shower. Point the tip into a small cardboard box or something and blow it clear.



Clearing solder with a de-soldering tool

Diagram 3

Once you think that you have cleared the hole, hold the board up to the light and check your work. It should be nice and clean, with nothing in the path of the new part. If it is not, re-solder the hole and try again. In fact, adding solder to the hole before you start any soldering or de-soldering operation is a good idea (if the hole is already full of factory solder). Leave a reasonable sized blob on there so the braid or iron can melt the hole easily. Solder is a good heat conductor and all the excess will be removed, anyway.

Try as you may, you cannot always work with a single wire at a time (when I am ripping up a board, I cut resistors in half, clip leads off of transistors and ICs—anything I can to get a single lead removal—parts are cheap). IC sockets are the main problem. You just can't easily cut them up into individual pieces

and you cannot heat all their pins at once to pull them out. You have to clear the holes with the lead still in there. This is where the de-soldering tools generally do better than the braid, although I have talked to folks who swear by the braid even in an occupied hole. Anyway, when a hole cannot be cleared of wire, you must suck out as much solder as possible (using either method) and then free the wire from the hole. Look at Diagram 4. The wire is always very close to or touching the wall of the hole, which is tinned copper, remember. At these points, some residual solder remains, blocking easy removal of the lead. Using a little force with the tip of your iron, heat only the tip of the lead and push the wire away from the wall where it is stuck.

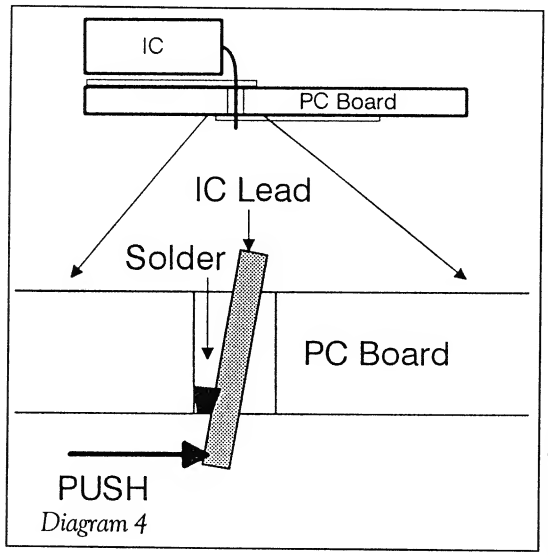


Diagram 4

As soon as it pulls free, remove your iron. If you are lucky, the wire will not re-melt the remaining solder and stay loose. This is likely if you only touch the tip of the wire long enough to just melt the bond. By the time the wire contacts the solder again, there should not be enough heat to re-establish a bond. When you think the wire is loose, wiggle it with your tweezers—you can tell when it is not bonded quite easily. Keep trying, it will work eventually. You may even have to re-solder the hole, clear it and try again. Be aware that rosin itself will create a weak bond between two parts. Be patient.

The best thing you can do for yourself (besides practice) is to buy good tools. An old wood burning set is not the place to get your soldering iron.... (I wonder if many people even remember wood burning sets. Can you imagine giving a child a craft set with a red hot iron as it's main component? Where the major activity is manually burning a pattern into a piece of wood?) Radio Shack may be the most convenient source for your electronic supplies, but it is sometimes worth the extra effort to mail-order something as important as a good soldering iron. Check with the suppliers listed and consider doing yourself a favor. In general, what you will need is a good 25 watt soldering iron with a tip somewhere around .090 in. wide. There are two choices here. A pencil iron that just heats the tip all the time (no temperature control—A Radio Shack iron or equivalent) and one of the solid state irons that control the tip temperature electronically. I used an unregulated iron for 25 years and did OK. Once I tried my HAK O 926 iron however, the old Weller iron was retired for good. The difference between the two types is the amount of heat you can deliver to the joint without using too high a temperature. A controlled iron can pour on the power whenever the tip temperature is below your setpoint. Once it reaches temperature, it shuts down. When you then attempt to solder a trace, the controller can again feed in high power to the tip. If you try that with a "dumb" iron, the tip is way too hot when you are not soldering or too cold when you are. Unfortunately, I can't really push the regulated irons for casual use because of cost ($100 or more). If you do plan on using the unregulated irons, get a couple of them—a 15, 25 watt and maybe a 40 watt. If you size the job well, they will probably do the job for you.

For de-soldering, the RadioShack 64-2060 works great for me. Here again, you will find a much more efficient unit at a considerable ($400!) cost penalty that will make the job much easier. I can't bring myself to spend that kind of money.... Get the Shack. Watch the tip on this iron—when the hole in the end of the tip starts expanding, replace it with a 64-2062 tip. Or, get some braid—Shack is fine (64-2090). Solder—use small diameter solder, like .050 63/37 (64-015) or even silver solder (64-013). For hand tools, get 4 inch needle nosed and diagonal pliers. Try to get very narrow tips and don't put too much pressure on them—they break easily. Tweezers and hand tools are best from other than Radio Shack. Look around. Check the mail-order sources. Write for catalogs. And, remember. Start on a board you can afford to waste.... Good Luck!

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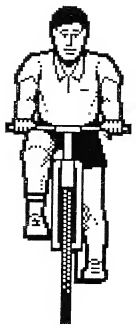
GEnie At 9600 Baud

Decker McAllister, Jr.

In the last AC Bob Woolley said he uses an Atari 850 at 9600 Baud with BobTerm. Bob Puff had told me that an 850 was unreliable at that speed. Since GEnie has removed the surcharges from 9600 and 14400 Baud, I decided to do some experimenting.



During 1995, I used a Hayes Smartmodem Optima 2400 with an 850. Bob Puff helped me set this up last January. It took a couple of calls before we could load it with the following AT commands that worked: `AT&F[RTN]`, `ATZ&K0[RTN]`, `AT&Q0[RTN]`, `AT&W[RTN]`.

What codes would work with the Hayes Acura 14.4 and 850 at 9600 Baud?

With some persistence, I finally was able to access GEnie at 9600 Baud using the Hayes Accura 144 Modem with the Atari 850 interface. When I first tried to connect at 9600, GEnie had some problems with its server which added to the confusion.

Here's the procedure I used. First, since the Accura User's Manual is written for Windows users, it does not contain a listing of the AT Command Set and its default settings. Fortunately, I had the copies of the User Guide and AT Command Reference Set that came with the Hayes Optima 2400. The Accura Manual states that the AT command set may be downloaded as the HAYESAT file from the Hayes BBS at 1-404-446-6336. However a Hayes Tech Rep told me that it was file TRM288.TXT in Menu 6, File Area 2. Since I didn't try to connect to the Hayes BBS, I can't confirm that. I did try looking for either of those files on GEnie in the HAYES RT, page 435. Since I don't have much RT experience, I haven't found the files yet.

In any event the factory default settings may be obtained from the Modem as follows: 1) Boot BobTerm, 2) Set Full Duplex, 3) Go to terminal, 4) press [OPTION] to turn on the capture buffer, 5) Type `AT&V [RTN]` to display the factory set profiles, 6) Close, save and print out this factory profile.

Now go back to the terminal and enter the following AT Code changes: `ATZW2&Q5&W [RTN]`.

The final step is to set up a GEnie Log-On Macro. Go back to the BobTerm Main Menu, and enter the Dialing Menu to put in the telephone number, baud rate etc.. This will be the same as for 2400 except for telephone number and log-on Macro.

The 2400 Macro used delays and `HHH` as follows: `[CTRL][P]H[CTRL][D]H[CTRL][D]H[CTRL][P][CTRL][P]userid,password,200;2`.

According to a GEnie Tech Rep, it is not necessary to use `HHH`. You only need a 2-3 second delay when logging on at 9600 as follows: `[CTRL][P]userid,password`.

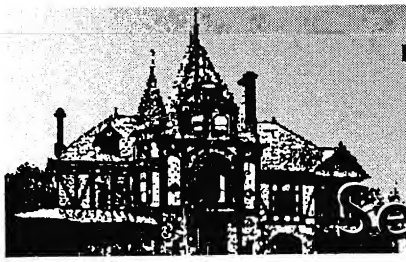
In reality you may have to experiment a little to see what works best. I ended up using `[CTRL][P][CTRL][P]userid, password`. This works fine both with the Accura/850 and Accura/CSS BB. However after a little more experience, I may try out only one `[CTRL][P]`.

There is one little problem with the Accura/850 system at 9600. When [RTN] is hit to initiate log-on from the BobTerm Dialing Menu, the [RTN] often doesn't "take". When it doesn't, I return to the Main Menu, reenter the Dialing Menu and hit [RTN] again. Usually it "takes" by the third try. This problem of communication between the BobTerm/CPU and Atari 850 occurs at 9600 and is the one that Bob Puff referred to. However, there was no problem once the "CONNECT" was made. This problem does not occur when the Accura 144 is hooked up to the CSS Black Box.

In mid December, my system was upgraded to a 320K 130XE, BB/FB, Fujitsu 135MB HD, and TEAC 3.5" 1.44MB FDD. This was in addition to the XF551, 1050, Panasonic KX-P1150 9-Pin Printer and Hayes Accura 144 Modem. This system has been operating flawlessly, and I plan to try logging on to GEnie at 14400 as soon as I gain more experience with the system.

Charles Cole sent me a 14 page list of AT Codes and a subsequent list of S register descriptions. I plan to send him some additional S register information, and compile all this information into an Atesig Resource Book (ARB).

By the way, Electronics and Computers Surplus City (ECSC), 1490 W. Artesia Blvd. Gardena, CA 90248 ; Tel: 310-217-8021; FAX: 310-217-0950; BBS 310-217-1922 has a large supply of good, used Hayes Smartmodem Optima 1200s and 2400s at $10-$15 each.



The Garret

Secrets of PaperClip

Ed Hall

It musta been one helluva blast. All I knew, I was flat on my ass watching the pretty stars spin round my head.

"Too much bang," said a voice, possibly my own. I got up rubbing my noggin and wondering what kinda mess I had gotten myself into this time. Up ahead I could see a stone arch fringed with ivy, and a slab of door dangling by a single blackened hinge.

Well, I thought, might as well see what's on the other side. So, still feeling woozy, I staggered through the portal and found a handsome lizard-man awaiting me. He was bare-chested, his face framed by a dark cowl of tousled hair. One arm was hooked over the hilt of a great sword, which stood beside him like a crutch, its tip plunged into the sand. His legs were clad in tight ragged jeans, from which protruded a pair of heavy clawed feet and a tail.

"I knew you'd return," he said confidently, lifting the sword and moving toward me.

"Hold on," I warned him, raising my hands karate-like. "I don't want to hurt you, but you should know that I'm armed with something far mightier than a sword."

He laughed. "I hope it's a pen. I've always wanted to put an end to that particular myth."

I shook my head. "Sorry to disappoint you."

"What is it then? Pistol? Brass knuckles? Pepper spray?"

"Word processor," I told him as my hands flashed downward. He began to disappear.

"Wait a minute," he cried.

"Sorry," I said and kept deleting. "You're just not right for this story."

EDITING THE LIZARD-MAN

The ability to delete and move blocks of text is crucial to word processing. The program I've been using for the last 10 years is PaperClip, and unfortunately its block function is totally inadequate. First of all, the entire process is extremely slow and cumbersome. Here's what you have to do:

a) position the cursor at the beginning of the block of text you wish to move or delete
b) press Control + M
c) move the cursor to the end of the block of text and press Return
d) press D, C or M to delete, copy or move the block of text
e) if you are copying or moving text you must then position the cursor at the destination and press Return, which causes the text to be slowly deposited, one character at a time

Lack of speed and cumbersome procedures can be lived with, but a far more serious problem remains: a maximum of only 30-35 lines (depending on the number of characters per line), can be moved. That's about a screen and a half of text. This is a dire limitation, but fortunately there exists another way to manipulate blocks of text. It involves something called the paste buffer, a special area where deleted lines are temporarily stored. Using it is much faster than the official block function, and there's no limitation on the amount of text you can handle. Here's what to do:

a) position the cursor at the start of the text to be moved and press Return
b) press Shift + Delete to delete (and temporarily store in the paste buffer) as many lines as desired
c) position the cursor at the destination and press Shift/Control + P to instantly deposit the deleted lines

Make sure you understand exactly how the paste buffer works. You can use it to store as many lines as you want, but as soon as you move the cursor, the operation is over and any further use of Shift + Delete is deemed a new operation. Then the paste buffer is instantly cleared (no warning!) to make room for newly deleted text. (Note that one other command uses the paste buffer, Shift/Control + Delete, and that pressing Reset will empty the buffer.)

Once text has been entered into the paste buffer, it can be "pasted" back into the working area as many times as desired and at any location. In other words, Shift + Delete can be used not only as a "move" command but also as a "copy" command. It's so handy that I also use it as a quick-and-dirty macro.

Another useful editing feature of PaperClip is its ability to open a window and create a second document. By means of the paste buffer, you can transfer text between the two. How is this useful? Sometimes when I'm working on a story, I write a chunk of text which I like but which is not quite right for the story. What I do is delete it using Shift + Delete (thus entering it into the paste buffer), then press Select to open a window and paste the text there by hitting Control/Shift + P. Then I save that section to disk in the usual way, close the window, and continue working on the original file.

Thus I did not really consign the lizard-man to oblivion. Thanks to PaperClip's paste buffer and window functions, he is now safely hidden away in his own disk file. If I'm in the middle of another story and suddenly decide that he'd fit in nicely, all I have to do is open a window, load his file, enter it into the paste buffer, close the window, and place him at the desired spot.

The size of the window, by the way, is adjustable.

PAPERCLIP FOREVER?

Another major reason I'm using PaperClip is its ability to accommodate large files. I need a wp that can routinely handle at least 20 pages of text, which is about the length of a chapter in my long-awaited novel.

One problem with large files, though, is just getting from one place to another. Most wp's employ three methods: line-by-line scrolling, immediate transport to the beginning or end of a document, and a "bookmark" feature, which allows the user to mark a place and go to it instantly from another location. PaperClip has these features, but the one I most value is not always found on other Atari wp's. By pressing Shift/Control and the up or down arrow, you can "page" through a document one screen at a time. This is an incredibly speedy way to navigate within a lengthy file. Absence of this feature alone has kept me away from many other wp's, including the highly regarded TextPro.

Despite PaperClip's many fine qualities, it isn't perfect. For example, it doesn't recognize dual (1050) density, and refuses to format disks in double density on my XF551, so I'm restricted to the skimpy storage capacity of single density disks. And of course, PaperClip is limited to 40 columns. Thus, when AtariWriter 80 came out, I was overjoyed. Even though it's a rather pricey package (since you also need a piece of hardware, the XEP80), I felt it was worth the cost. Besides, Matthew Ratcliffe had given it a decent review in ANTIC (Dec. 89/Jan. 90). At last I could have 80 columns and double density storage, as well as large files, block moves and and rapid paging.

What a sad joke!

Sure, AtariWriter 80 can do these things, yet most of them are accomplished so poorly that I was soon back in the arms of PaperClip. AtariWriter 80 has shortcomings too numerous to mention here, but chief among them is the screen's obsessive twitching and jerking. The program also boasts awkward key commands, and a bizarre memory management system in the 130XE version. Thus, it was with a sense of vindication that I noticed the many AtariWriter 80 glitches described in previous issues of this magazine. But by then I had long forsaken that neurotic piece of software.

There are loads of wp's out there in Atari-land, including some that use 80 columns without additional hardware. It really is too bad that none of them have been updated to take advantage of the XEP80.

A LITTLE DTP

As wp's increase in sophistication, they take on more characteristics of DTP programs, whose minimum requirements are the ability to use graphics, different fonts, and multi-column text. Even PaperClip, which has been around for more than a decade, can lay some claim to DTP. Graphics and fonts can be incorporated using the Verbatim command, though a little preparation must be done prior to printing.

For graphics, you must boot the utility HIRESDMP.BAS in order to use a Koala, Atari Light Pen, Atari Paint, Fun with Art, Syntrend, or B/Graph picture. Once the picture is loaded, you must press menu item 8 to convert and dump the picture to a disk file. It is this file which the Verbatim command calls up from within a document. The printed output is quite nice.

For fonts, you need FXSET.COM which converts standard 9-sector Atari fonts to Epson FX80 sets. Your printer must be Epson-compatible and able to receive downloaded character sets. The Verbatim command is then used from within a document to transfer the converted font to the printer.

One of the features I most appreciate about PaperClip is its true, double-column printing capability. No rolling back the paper here. Just embed a few symbols and off you go. In fact, you can switch double-column printing on and off with a few simple commands. The output, however, will be right-justified, which I abhor since this inevitably opens up unsightly gaps between words. Therefore, I always place a carriage return at the end of each line to keep the right margins of both columns ragged. I also make sure there is no blank space between the carriage return and the final letter of the line, otherwise the margins get slightly out of whack.

The only problem with PaperClip's double-column capability is the length of time it takes to give a print preview. So long, in fact, that I use a different method to make sure that the columns start and end where I want them to. With PaperClip's default margins, each double column contains 54 lines. Thus the second column on page 1 begins at line 55 and ends at line 108. And so on:

page	col. 1		col. 2	
	start	end	start	end
1	1	54	55	108
2	109	162	163	216
3	217	270	271	324
4	etc.			

By referring to this chart and PaperClip's line count, I can rapidly page through a document, note where each column ends, and make any spacing adjustments without reverting to the lengthy print preview process.

COMMAND SUMMARY

Many of the commands I've discussed are not undocumented, just poorly documented. For example, the paste buffer by its very name indicates that it was meant to be used in the fashion I've described. Yet this use is only hinted at in the manual, which treats the subject under the heading of "Deleting Copy."

Worse, the index is woefully inadequate. Look up "block move" and you won't be referred to the paste buffer. Look up "graphics" and the Verbatim command isn't mentioned.

So, here's a quick summary of the commands I've dealt with in this article. The list is not exhaustive; PaperClip has many more commands for editing and cursor movement than I've covered, and the Verbatim command has other uses.

"C" means Control key, "S" the Shift key.

Editing

S + Delete - delete line and enter it into paste buffer

C/S + Delete - delete from cursor to beginning or end of file and enter contents into paste buffer

C/S + P - paste contents of paste buffer at cursor position

Cursor

C/S + up arrow - page up
C/S + down arrow - page down
C/S + H - start
C/S + E - end
C/S + T - set bookmark
C/S + G - go to bookmark
SELECT - switch windows
C/S + D - close window

Verbatim

C + Z followed immediately by VD:FILENAME - print converted picture file, or transfer converted font from file to printer

Double-Columns

C + M - set margins for 1st column

C/S + Z - set margins for 2nd column

OTHER STUFF

PaperClip comes in several versions; I know of at least four (1.0, 1.2, 2.0, 2.1) and there may be others. I use 2.0 with a standard 130XE and a Star NX-1000 printer.

All versions use a plastic "key" or dongle which must be inserted into port 2 before the program will operate. It always seemed to me a very reasonable protection measure, since this enabled the manufacturer to leave the disk itself unprotected. However, after years of use, the fit between key and port on my computer became so sloppy that I had to continually fiddle with the key to make it work. Thus I was happy to discover that a commercial program called Chipmunk is able to provide a fix which eliminates the need for a key.

Getting PaperClip to work with your printer can be hellish if you don't have a printer for which a pre-rolled configuration file exists. PaperClip has a utility for creating your own .CNF file, but the documentation is not as helpful as it could be. For more detailed info, you should refer to a couple of excellent articles called "PowerClip" by John Picken of Garden City ACE (Victoria, BC, Canada). The articles originally appeared in the May and June 1990 issues of Puget Sound Atari News, but have since been reprinted in other club newsletters. Much practical advice is given, as well as printer drivers for Roland and Panasonic printers.

Another source of information about PaperClip (including some undocumented features) is "Secrets of PaperClip 2.1" by Craig Zawada in ANTIC (Feb./Mar. 1990).

Finally, the solution to the chess problem in my previous column:

1	N-KB3	P-QB4
2	N-K5	N-KB3
3	N-B6	KN-Q2
4	NxN	NxN

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HOLE IN ONE...

by Jack Lea

Don't I wish. That title wasn't the one I would have chosen for this article, if I had had my way, but so goes married life. You see my wife, God bless her, thought that would make a great title after what happened last night...but wait, I'm getting ahead of my story....

You see my wife and I decided to play MINIATURE GOLF with some of our friends last night. The game was going along very smoothly when... well, let's just call him Bill (to protect the not so innocent). You know the type, the kind that thinks he's the king of the hill and takes a friendly game and turns it into a life and death struggle. I had been holding my own pretty well with Bill. He was a few points ahead, but I was closing fast. I noticed Bill's face was grudgingly turning from pink to red, and his lips were becoming a snarl just like his stupid Boston bulldog that follows him everywhere he goes...including my house, where my two cats hold the same opinion of his dog. I glanced to my right and saw my wife's eyes glued to the golf ball that I was preparing to hit. She is normaly very supportive of my efforts but not now, oh no, not now; like everyone else she had been caught up in the competition of the game. My wife, as well as Bill's, was trying to putt her way to the top. I turned my attention back to the small golf ball that had become so important to this small crowd. Nervous sweat was starting to form on my brow and in the palm of my hand. I wiped my hand on my pant's leg so as to have a better grip on the stick. I could hear Bill whispering in the background, and then a burst of laughter from everyone.

"Oh come on, leave him alone so he can concentrate," my wife said, in between controlled giggles of her own. I pulled the club back and placed a solid blow to the side of the ball, which sent it gliding down the path to the hole. "A hole in one," I thought to myself, "oh boy, this is going to put me ahead of old Bill, and it's going to just kill him." Cause he just doesn't like losing to anyone. The ball was almost to the edge of the cup. You could have heard a pin drop for the first time that night. That golf ball's going to be like a bullet to Bill's heart when it drops into that cup. It'll serve him right; he's been riding my back all night. Just a little further, just a little further, and it will be in the cup, in the cup...

A flash blew across the screen—a flash—screen—whats going on? I had been so involved in this miniature golf game that I had forgotten it wasn't real. Why I could even hear the sound of the ball rolling on the green artificial turf and smell the leather on the handle of the golf club. We had been playing a computerized miniature golf game from the Atari software library that I had bought the other day.

"Oh honey, I'm sorry! You know I didn't mean to knock over your drink."

"You really shouldn't have set it so close to the computer," my wife said with a worried look while noticing my glazed eyes.

I was finally brought back to reality by Bill slapping me on the back. "Well, I guess that's going to make me the champ. I'd say best two out of three, but I suppose that's out of the question now, hee, hee," Bill said as he hitched up his pants and strolled to the kitchen for another bee...uh...Coke.

"Well, we'd better get on home. It's getting late, and I have to go to work early in the morning," he complained as he bent over to pick up his smelly old bulldog. "Listen, if you can get Art Conrad to fix your computer call us. Me and Ma'll come over and give you a chance to get even."

"Ya'll drive safe, ya hear," I said, waving a hearty good night as their station wagon backed out of the driveway. "Uh, get-even," I grunted, as I slammed the door....

"What's the matter honey?" My wife said, as she gathered up the dirty dishes.

"Oh I don't know, did you get into the game as much as I did?" I said, hoping she had.

"Honey, no one gets into a game as much as you do. I worry about you sometimes," she said, as she took her apron off and folded it neatly on the kitchen cabinet. "Someday you're going to get so deep into one of your computer games, or programs that it'll be the last time the kids and I get to see you."

I walked into the room where my poor, still smoking Atari 1200XL computer sat looking so dejected.

"Come on Oscar (the name I'd given my computer) we'll have to go see the fixer-upper man, Art Conrad in the morning."

"What? You know you have to be at work in the morning by 5:30 a.m., and your boss is not going to like you missing work for another one of your lame excuses!" I hear my wife's sweet voice booming from the bedroom.

"What lame excuse are you talking about?" I said in my defense.

"Well, like the time Art Conrad and that guy you call Jack the Wiz."

"No honey, that's Jack Wisdom," I said correcting her.

"Well, whatever; you know what I mean. They call you up about some three day Atari convention so you tell your boss at that hamburger joint you work at that your daughter just had a baby in Dallas, and you had to go help clean up her house till she was back on her feet again."

"Boy, this just isn't my night," I thought. Not only do I lose to a game bully and blow up my computer, but now my wife is putting down my career. "Honey, you know I couldn't keep my mind on my work if I didn't get Oscar taken care of first," I said with a whine in my voice. "Besides, if I go to work with this on my mind, I might get hurt on one of those grills up there. You know I've heard about guys bringing one of those grilltops down on their hands, and that's something I don't want to happen to me. I might not be able to type again, you know," I said as I stepped into our dark bedroom.

"Oh, I don't think you'll ever be unable to type with a nose like yours," she snapped.

"Why are the lights out? Are you going to sleep already?" I asked.

"Yes I am, comes a cold reply from the dark. I thought you could sleep with Oscar tonight; he should be able to keep you warm...."

T — Y — N — E — & — W — E — A — R

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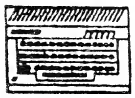

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U — S — E — R — G — R — O — U — P

PoolDisk Review

8-Bit Programs on CD-ROM

Bob Woolley

From: "Ernest.R.Schreurs"
<ernest@pi.net>

We are happy to announce the availability of the "POOLDISK" CD-ROM for the Atari XL/XE computer. This CD contains the contents of over 2000 diskettes. Everything is stored in the ATR format as used by SIO2PC and APE. This is also compatible with the format used by the Xformer. There are some 250 Megabytes of ATR images on the CD. To accommodate the Atari ST users, all images are also stored in the XFD format as used by the ST-Xformer. This occupies another 250 Mb. These disks include over 250 diskettes from ABBUC, and over 330 from the BELLCOM PD library. There are also lots of disks from usergroups, magazines and disk magazines. The Umich.edu 8-bit archive has also been converted to the ATR format and is now stored in over 500 disk image files. There are also some files not in ATR format on the disk, for those that want to try and write an ISO-9660 driver for the XL/XE. Until someone manages that, you need a PC or an Atari ST to act as a server for your Classic Atari, or one of the emulators. The remaining 100 meg of the CD is filled with 165 pictures from various Atari 8-bit systems and peripherals. This CD is now available from us for US $ 35, which includes shipping by the cheapest possible rate, which may take over two weeks. Send a check drawn on an US bank to:

Ernest R. Schreurs
Kempenlandstraat 8
5211 VN Den Bosch
The Netherlands

Make checks payable to Ernest R. Schreurs. Do not forget to mention the mailing address, so we know where to send the CD to. If you cannot send a check, US $ 35 in cash is acceptable too, but then it is your own risk. If the money does not arrive, we will not know that you sent any. If the check or the money gets here, we will ship the CD as soon as possible. A few notes: some of the disks are in German, Polish or Dutch. As far as we know, everything on the disk is Public Domain or Shareware, except for the Pokey Magazines and the Mega-Magazines, which are on the CD by permission, and are restricted from further copying. You are responsible for whatever is copied off the CD, if we accidentally placed anything on the CD that is not PD. If the Jewel box cracks during shipping, this is your own risk. After all, a new one costs under $1.

If you have any questions, send an E-mail to ernest@pi.net

Last month I had about 2500 Atari 8-bit disks. Now, I have twice that many. My old disks are your typical mix of commercial software, magazine, user group, PD downloads, data disks, and things I wrote myself. They are scattered throughout my space in no particular order (except for my BellCom disks) and the chances of finding any particular file are zilch. Naturally, I spend a lot of time doing a sequential search of all these disks whenever I need a program or doc that is hiding out in them. My new disks, on the other hand, can be searched electronically in a few seconds. They take up just a tiny fraction of the space that my old disks consume, making it a trivial task to find them. And, best of all, they cost me less than $.02 each! My new disks aren't floppies, of course, they are on a CD-ROM - the PoolDisk from B&E.

Sometimes you just need to try a product before you really get a feel for it's utility. If you had asked me about putting a bunch of PD files on a CD-ROM last year, I probably would have not been too excited. What you can't experience is the sheer number of files on such a product and what that would mean to the average user. Take the BellCom library, for instance. It is an 800 disk set that contains thousands of 8-bit files. If I want to look for a file in such a collection, I need some sort of catalog to search. I need to pull from storage any disks that contain files of interest. I need to mount each disk and check the file on my 8-bit. If that does not produce what I am looking for, or I want to expand my search, it's back to the beginning for another pass. With the PoolDisk, I can do all of these steps directly from my PC. I use a simple program called WHEREIS.COM to locate a file by name. Using SIO2PC, I can mount any file on my 8-bit easily. And, the selection is huge! I printed a directory listing of the PoolDisk - it was 268K.... I finally got it to print using 5 point type at 5 columns per page. It's over 16 pages long. 9400 entries.

As much as I would like to print the PoolDisk directory in AC, you won't be seeing it anytime soon.... So, let me break down the contents as best as I can. There are four main sections: PC, XL, XL ATR, and XL XFD.

PC

You would not think that an 8-bit CD would have much in the way of PC files on it. However, there is no CD-ROM driver for the 8-bit, so you need an IBM (or ST) in order to read the disk. And, your first concern is how to get these IBM CD-ROM binaries over to your 8-bit. This is where you start - in the PC section. A complete SIO2PC file is available, as well as APE and multiple versions of PC to Atari disk transfer routines. There is at least one IBM disk utility that allows you to look at IBM disk structure (ANADISK). There are a couple of incomplete 8-bit emulators (but you do get source code), as well as the XF33DEMO version of Xformer. A cross-assembler (AS6502). An ASCII to ATASCII to ASCII text conversion utility (IBM2A). There are multiple zipped large SpartaDOS ATR images (they seem to be difficult to make properly from 1 to 16 meg). You can read any of the 207 issues of

ZMAG (7.2mb). Or, one of the 54 text files covering hacks and 8-bit info. Or, one of the many Infocom solutions. Or, a very nice Atari reference manual that covers the 8-bit internals. When you get tired of reading, there are also about 150 pictures of 8-bit hardware (all the commercial stuff plus things like the 1090 and 1450XLD) for you to look at - a viewer is included.

All this is in the PC section - which covers the first 1.5 pages of the directory listing! There is a selection of ST files included (maybe 75), but I did not have the resources to investigate them.

XL

Then comes the good stuff.... Thousands of 8-bit files. The XL section contains more than 7 pages of files - 3000 files give or take a few. They are arranged in directories loosely by type:

DEMOS
- BASIC, including POP and SCANTRON
- M/L, including PYRAMID, and RHODAN
- TURBOBASIC
- XFORMER.

EDUCATIONAL
- BASIC
- M/L

GAMES
- BASIC 140 files
- M/L 100 files
- TURBOBASIC

GRAPHICS
- BASIC
- KOALA 450 files
- M/L
- MOVIEMAKER

MISC.
-

MUSIC
- AMS 700 files
- BASIC
- M/L

TREASURE (I assume that this is a PD collection)
- ACTION 80 files
- ASM
- BASIC 250 files
- C
- M/L 900 files

+DOCs 200 files
- FUZZY (?)
- LIST(ed)
- M65
- PASCAL

UTILITY
- BASIC
- M/L including 200 NLQ fonts

A guy could spend a lot of weekends just going thru these files. And then he can start on the next sections – the disk files.

ATR/XFD

The ATR and XFD sections are identical except for the format of the entries. The ATR section contains about 2000 disks that can be directly loaded as an SIO2PC disk. The XFD section contains the same disks in XFD format for use with the Xformer emulator.

Notice that I said disks, not files. These are a full disk of files that were published by various groups around the world. The number of files on these disks is astronomical....

ABBUC	230 disks
AMC	
ANALOG	50 disks
ANTIC	90 disks
BELLCOM	300 disks
BPAUG	
BRACE	
BRE	60 disks
COLONIA	60 disks
C and T	80 disks
DEMOS	
HTT	
INVASION	
MEGA-MAG	
MISC	250 disks
PAC	
PACE	
PD-MAG	
POKEY	120 disks
R-ATARI	
SAG	
SEX	oops... this can be a problem
SPACE	100 disks
STACK	90 disks
STARBASE	
TOP-MAG	60 disks
TWAUG	
UMICH	InterNet archive – 450 disks

One really nice touch with many of the collections is a text file that describes the contents of the disks. For example, the C and T DISKS.TXT:

C & T ComputerActive - PD Disks

Disk	Description	
001.ATR	Game Disk #1	- Basic
002.ATR	Game Disk #2	- Basic
003.ATR	Game Disk #3	- Basic
004.ATR	Game Disk #4	- Basic
005.ATR	Game Disk #5	- Basic
006.ATR	Game Disk #6	- Basic
007.ATR	Game Disk #7	- Basic
008.ATR	Game Disk #8	- Basic
009.ATR	Game Disk #9	- Basic
010.ATR	Game Disk #10	- Basic
011.ATR	Game Disk #11	- Basic
012.ATR	Game Disk #12	- Basic
013.ATR	Game Disk #13	- Basic
014.ATR	Game Disk #14	- Basic
015.ATR	Game Disk #15	- Basic
016.ATR	Game Disk #16	- Basic
017.ATR	Game Disk #17	- Basic
018.ATR	Game Disk #18	- Basic
019.ATR	Game Disk #19	- Basic
023.ATR	Super Arcade #3	
025.ATR	Down Hill Skiing and Construct. Set	- Basic
034_A.ATR	Textpro	
034_B.ATR	Textpro, Documentation	
040.ATR	Digitized Pictures #1	- Basic
041.ATR	Moviemaker Files	
042.ATR	Drawing Board	- Basic
044.ATR	Atari Graphic Demo #2	
045.ATR	Heavy Metal Art	
046.ATR	Magic Lantern	- Basic
057.ATR	Pokey Player Music #1	- Basic
058.ATR	Pokey Player Music #2	- Basic
060.ATR	Sound and Graphics #2	- Basic
061.ATR	Sound and Graphics #3	- Basic
072.ATR	AMS Music #4	
083_A.ATR	Trivia Quiz and Question Maker	
083_B.ATR	Trivia Quiz Questions	
085.ATR	Astronomy and Metereology	- Basic
087_A.ATR	R-Draw version 1.3, 130XE only	
087_B.ATR	R-Draw version 1.3, Documentation	
099.ATR	Sign Maker	
104.ATR	Alien Alive	
105.ATR	RLE Slide Show	
107.ATR	C Compiler/Editor/And Demo	
126.ATR	Everything Goes	- Basic
137_A.ATR	Antic Forth, Side A	
137.B.ATR	Antic Forth, Side B, Documentation	
138.ATR	Menu Programs	
139.ATR	Atari Basic Power Pack	- Basic
145.ATR	Disk Indexer	- Basic
146.ATR	MACH DOS v2.1 XL	

148.ATR	DOS 2.5+	- Basic
151.ATR	Utilities #9	- Basic
166.ATR	Monitor/Debugger and More	- Basic
169.ATR	Font Master	
170.ATR	Title Screen	- Basic
171.ATR	Radio and Electronics	- Basic
173.ATR	Micropaint Artist	
177.ATR	X-Y Plot	- Basic
185.ATR	Koala Pad Pictures #1	
186.ATR	Koala Pad Pictures #2	
187.ATR	Koala Pad Pictures #3	
188.ATR	Digitized Pictures #2	- Basic
189.ATR	Digitized Pictures #3	- Basic
190.ATR	Digitized Pictures #4	- Basic
200.ATR	Wheel of Fortune	- Basic
201.ATR	Game Disk #21	- Basic
202.ATR	Game Disk #22	- Basic
203.ATR	Game Disk #23	- Basic
204.ATR	Game Disk #24	- Basic
205.ATR	Game Disk #25	- Basic
206.ATR	Game Disk #26	- Basic
207.ATR	Game Disk #27	- Basic
208.ATR	Game Disk #28	- Basic
209.ATR	Game Disk #29	- Basic
211.ATR	Game Disk #31	- Basic
212.ATR	Game Disk #32	- Basic
213.ATR	Game Disk #33	- Basic
214.ATR	Game Disk #34	- Basic
215.ATR	Game Disk #35	- Basic
216.ATR	Game Disk #36	- Basic
217.ATR	Game Disk #37	- Basic
218.ATR	Game Disk #38	- Basic
219.ATR	Game Disk #39	- Basic
250.ATR	Beethoven	
251.ATR	Bach	
352.ATR	Card Games #2	- Basic
366.ATR	The Adventure Trilogy	
371.ATR	Aftermath	- Basic
409.ATR	MyCopyR!	
424.ATR	8-bit Reference Manual, disk 1 of 3	
425.ATR	8-bit Reference Manual, disk 2 of 3	
426.ATR	8-bit Reference Manual, disk 3 of 3	
427.ATR	Atari Basic Power Pack Utilities	- Basic
428.ATR	Soft Keys Source Disk	- Basic
429.ATR	Grip Assembler	- Basic
440.ATR	Pixel Artist Deluxe version 1.3	

If it isn't on the PoolDisk, it doesn't exist.... Well, actually, there are still a few disks and files that are not on this CD-ROM. But, not many. If this were your only source of 8-bit files, you couldn't do much better. And, it's all organized for you - I should spend a month getting MY disks sorted out?

OK, so you have this CD-ROM on your PC, just chock full of goodies. Many of them are configured to use directly on your 8-bit thru SIO2PC. But what about the huge quantity of native 8-bit files in the XL section? You can't use them with SIO2PC or any of it's clones. They must be run on your Atari. How do you get them over to your 8-bit? I have used a couple of different ways, but mainly stick with either SIO2PC or UTIL.EXE.

SIO2PC

Nick Kennedy probably didn't realize what an impact his SIO2PC project would have on the 8-bit world. Not only can you use an IBM as a disk or printer subsystem (using the .ATR files), but it makes mass storage like this PoolDisk much more convenient. If I want to move a native 8-bit file (not an .ATR file) to my 8-bit from the PoolDisk, all I need to do is select the 'I' menu option from SIO2PC and give it a disk number and filename. The file is then available to copy onto the 8-bit. Simple.

But what if I want to move a bunch of files, like the adventure in XL/GAMES/BASIC/ADVENTUR? There are 59 different filenames in there! Do I have to install 59 files and copy them one at a time? Heck, no.... I use PKARC (ver 3.5 4-27-87) on the IBM to arc all 59 files into one large file and copy THAT onto the 8-bit. The easiest way to do that is to copy the files you want to ARC into a temp directory (easy if you use Windows Filemanager). Then enter "PKARC A ADV.ARC *.*" This compresses the 59 files (28K) into a single file named ADV.ARC (21K). Install ADV.ARC as an 8-bit file in SIO2PC and copy it onto an 8-bit disk (or HD). Use UNARC.COM on the 8-bit to expand the files back to their original state. (funny, the 8-bit takes quite some time to unarc the files, but I noticed that Bob Puff's UNARC is sure a lot more user friendly than the PKARC on the IBM) In fact, you can save time by just UNARCing the file directly from the IBM - without even moving the .ARC data to the 8-bit. (Install the ADV.ARC on D3: with SIO2PC and just run UNARC on your 8-bit with a source of D3: and a destination of one of your 8-bit native drives or HD. This not only works great for a large number (keep it under 64...) of files, but also allows very large file transfers. For example, the XL/UTILITY/BASIC directory also holds 59 files. But, they are 228K in size! No problem. They arc down to 174K and will fit nicely on a MYDOS DDDS disk. Takes a while to unarc.... go eat dinner. Go to a movie. It is all automatic. One arc, one copy, one unarc. Very cool.

UTIL

There are a number of UTIL versions on the PoolDisk itself. My choice has been the one in the MYUTIL directory. This PC program will write an IBM file directly onto a DD MYDOS Atari disk. You can then read the disk on your Atari in any DD drive (US-Doubler, RANA, PERCOM, INDUS, XF551, etc.) The process starts by formatting a DD MYDOS disk on your Atari. Take that disk over to your IBM and use it to transfer the files. You may want to arc the files on the IBM first. Enter "UTIL -WB B: DISKS.ARC" . This writes the IBM file named DISKS.ARC onto the IBM B: drive (where you have inserted a DD MYDOS formatted Atari disk). The -WB indicates a binary transfer - byte by byte - no alterations. In some instances, you may want to transfer an IBM text file (in ASCII) to the Atari and convert it to ATASCII. You cannot ARC the files first, of course, but entering "UTIL -W B: DISK.TXT" will write the ASCII text in DISK.TXT onto the Atari disk in drive B: and convert all the EOL and CR characters into ATASCII while it is doing it. Very handy.... I noticed two problems, though. Although you can use a 360K or 720K (3.5) formatted disk, the files past sector 720 (>180K) are bad. Also, although you can specify wildcards (*.BAS, etc.) in order to write a number of files, UTIL seems to move the head around a lot - your poor drive will wear out before you get all the pooldisk transferred. So, for a few small files, UTIL is a good choice. Leave the big stuff to SIO2PC.

Let me wrap this up with an excerpt from the .TXT file on the PoolDisk it-

self. If you think you might want one of these CDs for yourself, send $35.00 and join the rest of us....

WELCOME ATARI USER!

Congratulations for buying this CD-ROM. I hope you enjoy the use of this CD-ROM as much as I had producing it.

INTRODUCTION.

My name is Bo Schreurs, male, 37 years of age and an Atari Freak. It all started out with buying myself an Atari 2600 game system. This one was soon to be replaced by the Atari 800 computer system. And even up till today, it's one of my most favorite machines. During the last couple of years I acquired a lot of 8-bit software, commercial as well as Public Domain and Shareware. About 2 years ago, I came up with the idea of producing a CD-ROM containing all Public Domain and Shareware software available to Atari 8 bit up till then. Not until 1995, it was feasible to realize this idea.

PUBLIC DOMAIN.

All software programs on this CD-ROM are in the Public Domain, with the exception of the software programs marked as SHAREWARE. You don't have to make a contribution for a Public Domain program. If you like, you can change the source code of such a program for you own use.

SHAREWARE.

Software programs marked as SHAREWARE, can be used on a trial out basis. As soon as you use the program for a longer term than that, you'll have to send the author a reasonable donation for the software program. If you fail to do this, or if your not willing to do this, it is NOT allowed to use the program any longer. If you persist in using it, your will feel miserable the rest of your mortal life. It is NEVER allowed to change the object code or source code of a Shareware program, not even if you paid your donation!

REMARKS, SUGGESTIONS, CRITICISM, PRAISE, MORE PD, MORE SHAREWARE!

Do you have any remarks about the contents of the CD-ROM, or suggestions to improve it, criticism about the index of the CD-ROM, praise about the making and production of this CD-ROM (please do!), or do you have Public Domain or Shareware which is not on the CD-ROM yet (I would really be amazed if you haven't any), send a letter to (including disks maybe):

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CONCLUSION.

Producing this CD-ROM would not have been possible without the help of the following people:

Ernest Schreurs (STack BBS), John Maris (A New Generation), Kaj de Vos (A New Generation), Freddy Offenga (High Tech Team), Fred Meijer (Stichting Pokey), Bernard Kok (BECO-TEL BBS), Wolfgang Burger (ABBUC), Darek Mihocka (PC XFormer and ST XFormer), and let's not forget Nick Kennedy (SIO2PC software).

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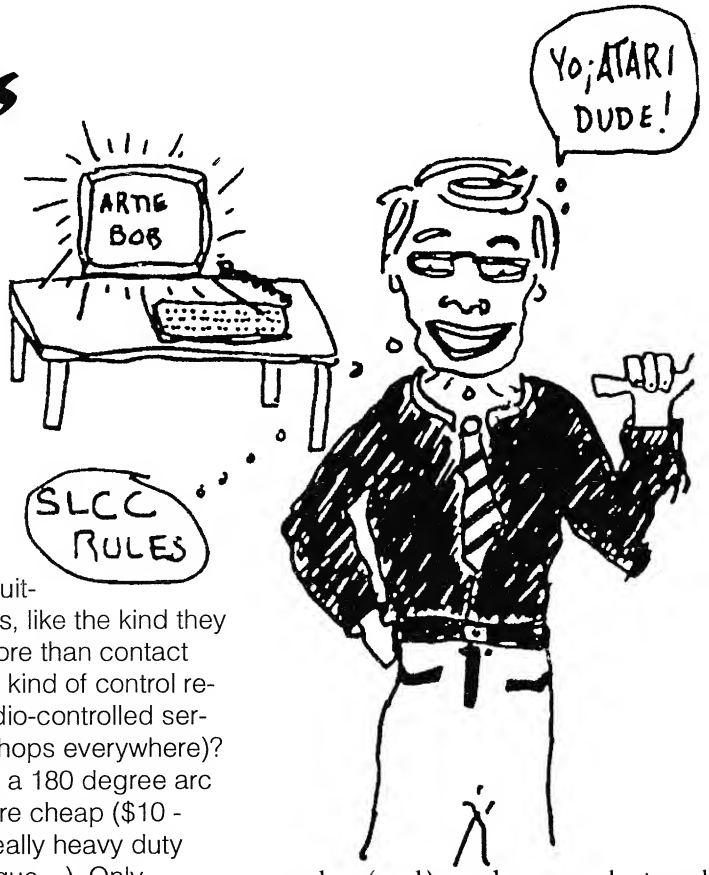
Controlling Servos

Bob Woolley



These old Atari 8-bits are a lot of things to a lot of users. Word processing, modeming, databases, spreadsheets—a lot of computer programming stuff. Some of us are even going to set up one of our Atari machines for really cool stuff like running our environmental controls around the house. Why not? A complete system is less than $100 and the joystick ports will accept any number of inputs from a transducer. You can even turn the joystick lines into output ports and control relays and solenoids and the like (using suitable drivers). One of us, Nir Dary, is even into puppets, like the kind they use in movies. Robots if you will. These take a little more than contact closures and blinking lights off the joystick ports. This kind of control requires a servo mechanism... You know, those little radio-controlled servos that they use in R/C models (available in hobby shops everywhere)? These little jewels will rotate their output shaft through a 180 degree arc and hold position as long as they have power. They are cheap ($10 - $100) and come in very powerful versions for those really heavy duty jobs (a 1/4 scale servo will produce 130 in./oz. of torque...). Only problem is, they require a little more effort to drive. And, when you need to co-ordinate the actions of more than one or two pairs of servos, it gets a bit messy. So, how about an 8-bit that will "play" a servo sequence to as many as 8 (or 16, on an 800) servos? You can use the servos to control a robot, open valves, set air handling vents, or steer your lawnmower. Sound hard? Naawwww... Read on.

First thing you notice about servos is the lack of a port on the 8-bit that says "plug servo here". Does not mean that there isn't one, it just isn't labeled! In fact, you can run ONE STANDARD servo directly from the joystick port with nothing but the proper cable and some software. Let me warn you though, a servo draws quite a bit of power from the Atari 5 volt supply, so don't try to run a whole mess of servos without an external 5 volt power source. If you are just interested in one unit though, just plug it right in. I have set up my 1200XL to drive the servo through J/S port 2 and left port 1 for use by a paddle controller. Actually, all four paddles and up to 8 servos can be run concurrently since the paddles use separate inputs from the joysticks (you would have to make some sort of 'Y' connector to get all the lines connected though). The BASIC program then can set the servo position according to the paddle rotation—as you turn the paddle, the servo rotates proportionately. You may develop your own configuration, of course. Mine is just an example.

Let's start with a little servo theory. The Futaba R/C servos (other manufacturers are similar—be sure to check their specs) are controlled by a repeating pulse stream over a three wire cable. The lines are ground (black), +5 volts (red) and control signal (white). The control signal is a narrow pulse that repeats every 1/60th of a second or so. The width of this control pulse tells the servo where to set its output shaft—1/1000th of a second width is about 0 degrees, where 2/1000th of a second width is about 180 degrees. So, our Atari has to produce a pulse every 16ms that varies from 1.0 to 2.0 ms in duration. The control line does not draw any power to speak of, and can be driven directly from the J/S ports. And, as I stated earlier, enough +5 volt power is available from the Atari to drive one standard servo directly—otherwise use an external supply (see Figure 1).

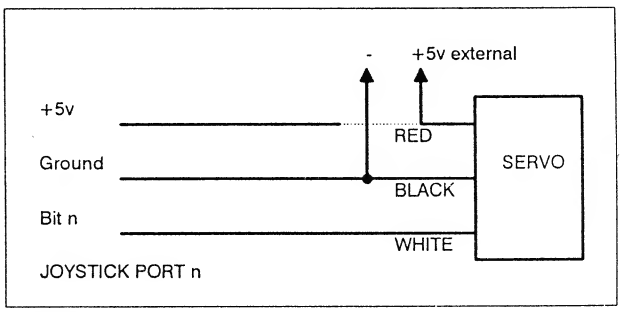


Figure 1

BIT MAP

ADDRESS	$8000	$8001	$8002	$8003	$8004	$8005	$8006	$8007	$8008	$8009	$800A	$800B	$800C	$800D	$80xx	$80FF
DATA	$FF	$FF	$FF	$FD	$FD	$FC	$BC	$BC	$B4	$A4	$84	$84	$80	$00	$00	$00
BIT 7	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
BIT 6	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
BIT 5	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
BIT 4	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
BIT 3	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
BIT 2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
BIT 1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
BIT 0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0

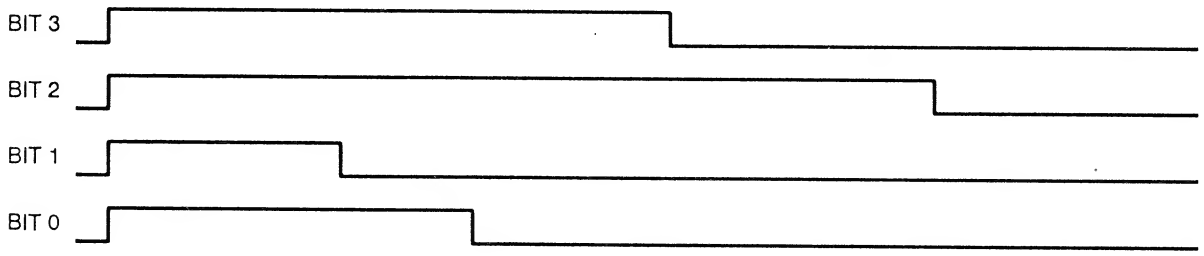
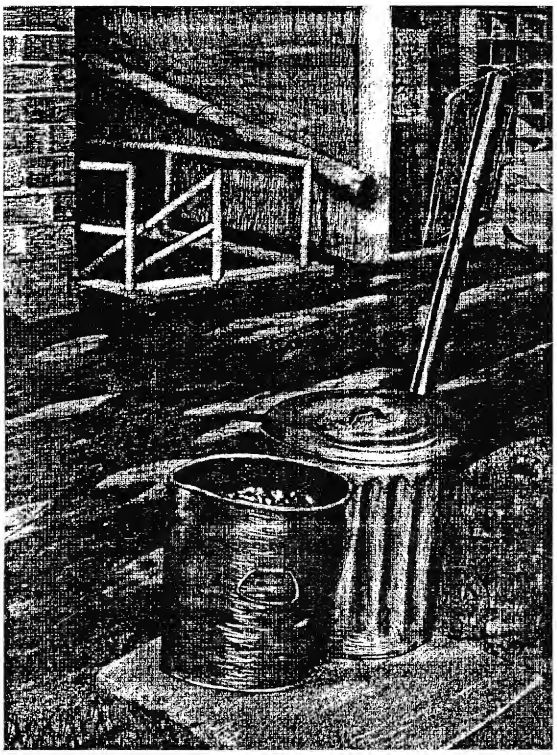


Figure 2

So, we need a pulse that repeats every 16ms.... Sound familiar? How about the VBI? Sure—the VBI occurs every 16ms. All we need to do is have it output a variable width pulse to the J/S. To make this as easy to use as possible, I have written an M/L routine that sets up the VBI to do just that. When using BASIC, loading the J/S port is transparent to the user—the servo position is solely a function of one byte in memory for each servo. Simply POKE a value into the control byte(s) and set $6FF to 0. The VBI will position the servo to your new setting. Your BASIC program can then go off and calculate where it wants to put its servos next, oblivious to the low-level mechanics of setting the pulse width itself.

The main VBI routine (lines 330—550) sets all the J/S bits to one and then sends the page at $8000 to the joystick ports one byte at a time. The data in this bit map is formatted to have a variable number of ones for each bit, followed by zeros to the end of the page (see Figure 2). Notice the bits in $8000 are all set to 1. When this byte is stored in the J/S port at $D300, all outputs will be on. This will continue until we reach $8003. At this point, (see bit 1 in Figure 2) the output of J/S bit 1 will fall to zero when we store $8003 in $D300 since the corresponding bit in memory is now zero. Bit 0 will go to zero at address $8005. Bit 3 will fall in $8008 and bit 2 will drop at address $800C. By controlling how many consecutive addresses have a bit set, we can vary the width of the pulse. All the VBI needs to do is a consecutive load and store of $8000 - $80FF into the J/S port ($D300). The VBI also checks location $6FF (1791) for the update flag. If $6FF is zero, the VBI will execute the load routine that set the bits in the $8000 control page. The update routine first zeroes the entire page. It then takes one bit at a time, starting at the last address to be set to 1 ($8000 + control byte at $6C7 (1735)), and sets it to one. Counting down towards $8000, it continues to set ones until it reaches $8000. It then stops setting the current bit and starts again at the highest address for the next bit. In this way, the values stored at $6C0 through $6C7 set the width of each bit in the bit map addresses. Since this update may require many machine cycles, it only executes when the flag is set, indicating a change has been made in the control bytes. The remainder of the M/L code (at $600 - lines 140 through 300) is the routine to set up the VBI vectors to execute our new code. You cannot just POKE a new VBI vector into memory since there is a good chance that you will have changed only one of the two address bytes when a VBI occurs. This will probably crash your system.... The routine at $600 is designed to set up the new VBI vector safely and needs to be called only once after a RESET. It also sets the J/S port to output rather than it's normal input mode (lines 240 through 300).

The BASIC program provided here is a simple read - the - paddle, set - the - servo routine. The byte at 1735 controls the servo connected to pin 1 of J/S port 1. The paddle at



But will it take out the garbage?

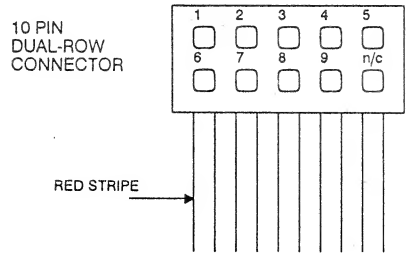
626 is the 0 paddle in J/S port 2. As I stated previously, the paddles and J/S bits are available for concurrent use as demonstrated in this program. I only used different J/S ports here to save wiring a custom connector, although that is fairly easy. Refer to the control bytes table to determine which $D300 bits are affected by which control bytes and the corresponding J/S pin. One thing—the paddle output stops at 228... it never makes it to 255, which is our maximum servo position. To extend the paddle range, you may want to add a fixed count to P at line 210 e.g. 210 P=PEEK(626)+25. You may also increase fine control over a smaller range by multiplying P by a number less than 1 e.g. 210 P=PEEK(626)*.75+50. Don't forget to POKE 1791,0 to force the VBI to update the bitmap at $8000.

These M/L and BASIC routines can be modified with few restrictions. The SERVO.ASM routines may be assembled in any convenient memory locations, just be sure to update any BASIC programs that may be using them. The bit map at $8000 may be placed in any page of free memory as long as the M/L routines reflect any changes. Please be aware that the current BASIC program does not protect $8000 from being overlaid by BASIC itself. As long as you keep your program small, $8000 will be OK. But, If you start a Monster Robot Controller program containing hundreds of lines of code, you risk trashing the current bit map at $8000. Either move the bit map above MEMTOP or lower MEMTOP itself.

CONTROL BYTES

DATA BIT	J/S - PIN	CONTROL BYTE
7	2-4	$6C0 (1728)
6	2-3	$6C1 (1729)
5	2-2	$6C2 (1730)
4	2-1	$6C3 (1731)
3	1-4	$6C4 (1732)
2	1-3	$6C5 (1733)
1	1-2	$6C6 (1734)
0	1-1	$6C7 (1735)
+5v	1-7 , 2-7	
GROUND	1-8 , 2-8	

Building a cable is not too difficult if you have access to some common connectors and flatcable. One restriction on the 9 pin J/S connector is the width of the plug. Most DB9 connectors have mounting tabs that make it very difficult to fit the plug into the Atari socket. The connectors you need should have either no tabs or a metal tab that is easily removed. Using a crimp-on plug and a corresponding dual-row connector makes a quick and effective cable in a few minutes, although soldering individual wires is another solution. When assembling the cable, look closely at the body of the DB-9 connector. You will see that each pin is labeled with a number. These are the pin numbers referred to in the text and diagrams. If you build the flat cable version as shown, the dual-row pinouts will be:



The dual-row connector then plugs into a small circuit board where as many as four servos may be connected (don't forget the external power if you use more than one servo!). At the DB-9 end, crimp the flat cable with the red stripe on the pin 1 edge of the connector and you'll be in business.

These programs are designed to allow you to set a servo pattern with a paddle controller, where you would record the control byte values that put the servo arm in the desired location. Once you have a suitable sequence, the control bytes can be read from a table and timed into the bit map to replay your series (which you could manually follow with another servo and the paddle). Or, you may want to input outside sensors to direct the servo response (a 400 or 800 would be great for this since they have two sets of J/S ports). Whatever your requirements, if an R/C servo will do the job, you can use these techniques to get it done.

```
0100 ;SERVO.ASM    1/27/96
0110 ;BY BOB WOOLLEY  ATARI CLASSICS
0120 ;
0130 ;
0140  *=$600
0150 ;
0160 ;BASIC CALL..SET UP VBI
0170 ;
0180  PLA          ;REQUIRED BY BASIC USR()
0190  LDY #$40     ;VECTORS VBI TO $640
0200  LDX #$06
0210  LDA #$07
0220  JSR $E45C
0230 ;
0240  LDA #$30     ;SETS J/S PORTS TO
0250  STA $D302    ;OUTPUT
0260  LDA #$FF
0270  STA $D300
0280  LDA #$3C
0290  STA $D302
0300  RTS
0310 ;
0320 ;
0330  *=$640
0340 ;
0350 ;VBI..WRITE TO SERVO
0360 ;
0370  LDA #$FF     ;ALL PINS TO 1
0380  STA $D300
0390 ;
0400  LDY #$C0     ;DELAY FOR .5MS
0410 LPY DEY
0420  BNE LPY
0430 ;
0440  LDX #$00     ;CONSECUTIVE LOAD
0450 LP1 LDA $8000,X;FROM $8000
0460  STA $D300    ;TO J/S PORT
0470  NOP          ;INCREASES RANGE
0480  INX          ;NEXT BYTE
0490  BNE LP1
0500 ;
0510  LDA $06FF    ;FLAG $8000 UPDATE
0520  BNE RETN
0530  JSR $0681    ;DO UPDATE
0540  INC $06FF    ;RESET FLAG
0550 RETN JMP $E462;END VBI
0560 ;
0570 ;
0580  *=$680
0590 ;
0600 ;UPDATE BIT MAP
0610 ;
0620  LDA #$00     ;ZERO $8000-$80FF
0630  TAX
0640 LP2 STA $8000,X
0650  DEX
0660  BNE LP2
0670 ;
0680  LDY #$07     ;STORE CONTROL BYTES
0690  LDA #$01     ;STARTING WITH BIT 0
0700  STA $06FE    ; BIT INDEX
0710 LP3 LDX $6C0,Y ;STOP ADDRESS
0720  JSR STORE
0730  ASL $06FE    ;NEXT BIT
0740  DEY          ; NEW CONTROL BYTE
0750  BPL LP3
0760  RTS
0770 ;
0780 STORE
0790 LP4 LDA $7FFF,X;GET CURRENT BYTE
0800  ORA $06FE    ;UPDATE THE BIT
0810  STA $7FFF,X  ;STORE NEW BYTE
0820  DEX          ;NEXT BYTE
0830  BNE LP4      ;UNTIL AT $8000
0840  RTS          ;DONE
0850 ;
0860 ;
0870  *=$6C0
0880 ;SERVO CONTROL BYTES (ARBITRARY)
0890  .BYTE $80,$40,$20,$10
0900  .BYTE $08,$04,$02,$01
0910 ;
0920  .END
```

```
100 Rem ** SERVO.BAS **
110 Rem
120 Rem BY BOB WOOLLEY
130 Rem ATARI CLASSICS
140 Rem 1/27/96
150 Rem
160 Rem
170 Rem * SETS VBI *
180 X=Usr(1536)
190 Rem
200 Rem * READS PADDLE *
210 P=Peek(626)
220 Rem
230 Rem * SETS J/S 1-1 *
240 Poke 1735,P
250 Rem
260 Rem * SETS UPDATE *
270 Poke 1791,0
280 Rem
290 Rem * LOOP FOREVER *
300 Goto 210
```

Adieu Atari?

The following article is from page B6 of the Wall Street Journal, Wednesday February 14, 1996:

ATARI CORP. AGREES TO MERGE WITH JTS, CALIFORNIA-BASED MAKER OF DISK DRIVES

by G. Pasacal Zachary, Staff Reporter, The Wall Street Journal

Atari Corp., one of the great names in computer games, said it agreed to merge with a maker of disk-drives that is run by two legendary high-tech figures.

Under the terms of the deal, JTS Corp., a disk-drive maker based in San Jose, Calif. will emerge as the surviving company, but shareholders of Atari, who must still approve the deal, will hold about 60% of the shares in the new entity. JTS was founded in 1994 by Jugi Tandon, one of the highfliers in the personal-computer industry in the 1980s.

Atari, based in Sunnyvale, Calif., valued the deal at $80 million, although it was unable to provide a per-share value. In American Stock Exchange composite trading yesterday, Atari stock jumped 18.75 cents, or 10%, to close at $2.65 [sic] a share. (Note: The price quoted in this article is in error; the correct closing price as quoted on Nightly Business Report 2/13/96 and reported in the Wall Street Journal 2/14/96 p.C-11 was 2-1/16 or $2.0625 per share.)

The chief executive officer of JTS is Tom Mitchell, cofounder and former president of Seagate Technology Inc., the world's biggest disk-drive supplier.

In an interview, Mr. Mitchell said that JTS will benefit from a $60 million in cash and cash-equivalents from Atari, which he said has a strong balance sheet but has faced serious difficulties competing against the much larger computer game companies, Nintendo Co. and Sega Enterprises Ltd.

At least at first, JTS will operate Atari's computer-game business as a subsidiary, but when asked how committed he was to continuing in that business, Mr. Mitchell said, "We'll just see how it goes."

Lee Isgur, an analyst at Jeffries & Co., said the merger could mean the end of Atari's presence in videogames. "It could be the end," he said, adding that he expected Atari to keep at least "a low profile" in the computer-game business for the rest of this year.

But August Liguori, chief financial officer of Atari, said "The name of Atari will continue to be used in the computer-game environment. We still have a wonderful game library and many patents associated with games."

As part of the deal, Atari said it has loaned $25 million to JTS, which will be converted into shares of preferred stock in JTS if the deal isn't completed.

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Atari User Groups

Below are user groups that responded to a North West Phoenix Atari Connection survey, 8-Bit groups that exchange newsletters with the San Leandro Computer Club, all the groups listed in *Feedback*, the newsletter of the Adelaide Atari Computer Club, and those that have contacted us. We believe the North American groups having "?" support both 8-Bit and ST users. We don't know which computers are supported by the Australian groups. You may send additions, deletions or corrections to "Where is..." at AC.

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8-Bit, ST

Houston Atari Computer Enthusiasts
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Huntsville Atari Users Group
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Huntsville, AL, 35816
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Indiana-Michigan Atari Group Exchange
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Jersey Atari Computer Society (?)
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Delran, NJ, 08075
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Waukegan, IL, 60079-8788
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M.V.A.C.E.
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Huber Heights, OH, 45424
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3632 W. 130th Street
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North West Phoenix Atari Connection
N.W.P.A.C.
Dale Wooster, President
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Phoenix, AZ, 85082
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Ol' Hackers Atari User Group
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Oceanside, NY, 11572
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Pinellas Atari Computer Enthusiasts
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Jean Brokaw, Editor
958 Phyllis Avenue
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S.P.A.C.E.
P.O. Box 120016
New Brighton, MN, 55112
8-Bit

San Diego Atari Computer Enthusiasts
S.D.A.C.E.
Paul Blagay, President
P.O. Box 900076
San Diego, CA, 92190
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San Leandro Computer Club
SLCC
Robbie Bridges, President
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San Leandro, CA, 94577-0374
8-Bit, ST, IBM

Seattle Puget Sound Atari Computer Enthusiasts
S*P*A*C*E
John Strand, President
P.O. Box 11042
Tacoma, WA, 98411-0042
8-Bit, ST

Toronto Atari Federation
TAF
5334 Yonge Street, Suite 1527
Willowdale, ONT, M2N 6M2
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Australian User Groups

Atari Computer Enthusiasts New South Wales
A.C.E. (N.S.W.)
Swavek Jabrzemski, President
G.P.O. Box 4514
Sydney, NSW, 2001
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Adelaide Atari Computer Club
Neil Patterson, President
P.O. Box 333
Kent Town, SA, 5071
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Alex Bienefelt
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Ridgley, TAS, 7321
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Roger Davies, President
P.O. Box 340
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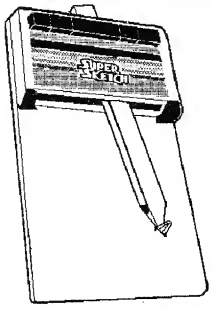

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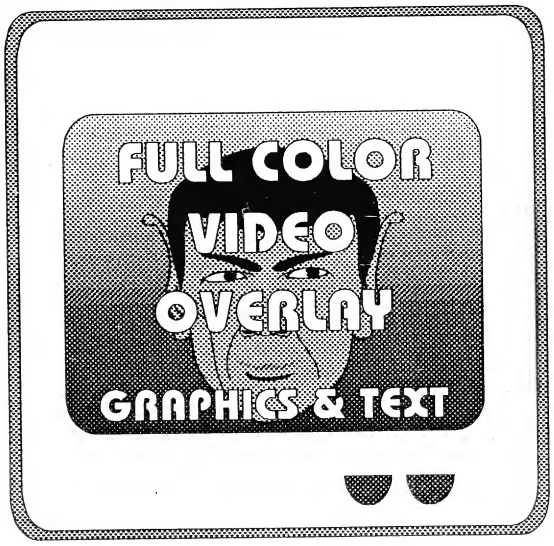

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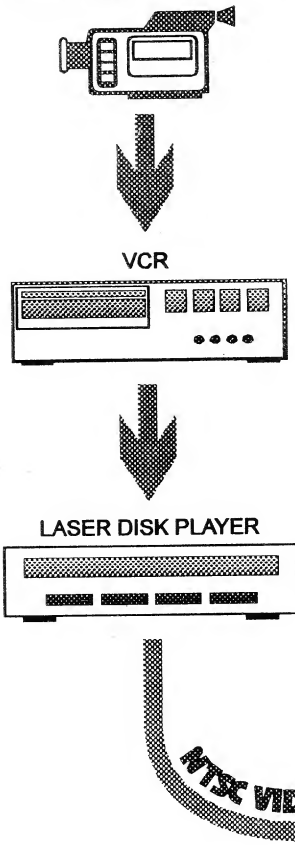

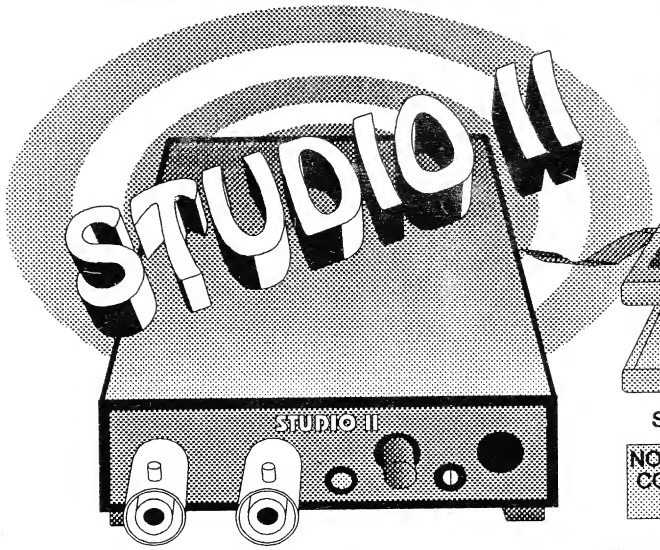

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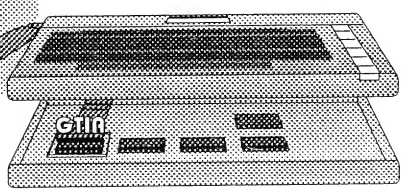

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